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UNITED STATES GEOLOGICAL SURVEY

GEORGE OTIS SMITH, DIRECTOR

BULLETIN 557

RESULTS OF SPIRIT LEVELING
IN THE
STATE OF WASHINGTON

1896 TO 1913, INCLUSIVE

R. B. MARSHALL, CHIEF GEOGRAPHER

WORK FROM 1909 TO 1913, INCLUSIVE, DONE IN COOPERATION
WITH THE STATE—HENRY LANDES, STATE GEOLOGIST



WASHINGTON
GOVERNMENT PRINTING OFFICE
1914

ELEVATION OF MOUNT RAINIER.

The elevation of the highest snow-capped summit of Mount Rainier was determined by C. H. Birdseye in 1913 from carefully checked vertical angles based on spirit-level elevation of McClure Rock. The distance between McClure Rock and Crater, a station marked by a rock cairn on the bare south rim of the mountain, was computed from triangulation data. The distance from Crater to the summit, which is 980 feet, was measured by stadia and checked by plane-table intersections.

The elevation of Crater is 14,267 feet and that of the summit 14,408 feet.

Mount Rainier is, so far as known, the second highest point in the United States.

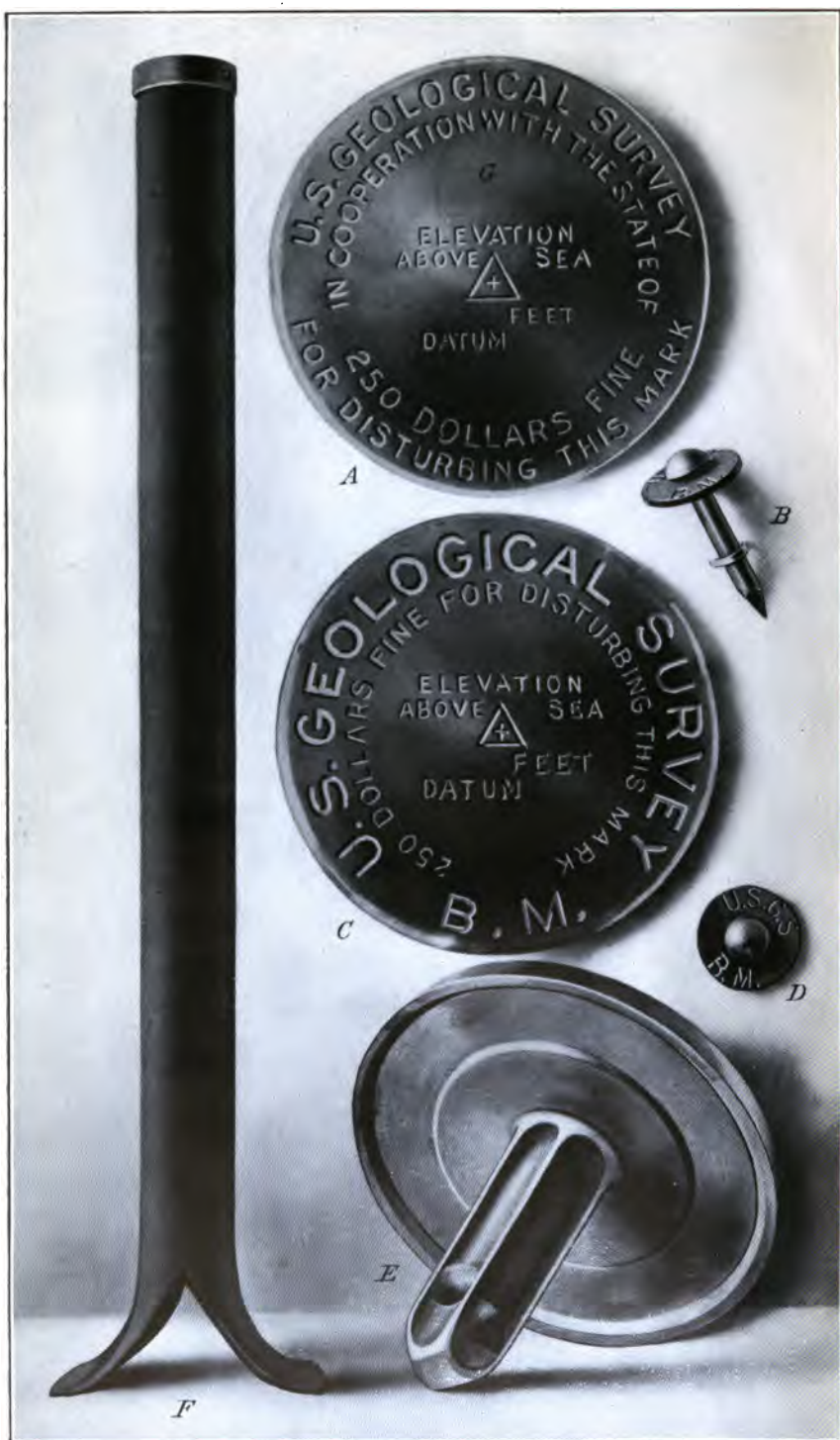
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GEOLOGICAL SURVEY BENCH MARKS.

A, Tablet used in cooperating States. The State name is inserted at *G*.
B and *D*, Copper temporary bench mark, consisting of a nail and copper washer.
A, *C*, and *E*, Tablets for stone or concrete structures.
F, Iron post, used where there is no rock.

RESULTS OF SPIRIT LEVELING IN THE STATE OF WASHINGTON, 1896 TO 1913, INCLUSIVE.

R. B. MARSHALL, *Chief Geographer.*

INTRODUCTION.

Cooperation.—The State of Washington contributed financially to the work from 1909 to 1913, inclusive.

Previous publication.—All results of spirit leveling in Washington previously published by the United States Geological Survey in Bulletin 457 and all results of later work in the State are included in this report. All elevations are based on the precise-level line of the United States Coast and Geodetic Survey from Seattle to Wallula, as adjusted by that bureau in 1912.

Personnel.—The field work previous to 1903 was done under the general direction of R. U. Goode, geographer; that for 1903 to 1906, inclusive, under E. M. Douglas, geographer; that for 1907 under R. B. Marshall, geographer; and the later work under T. G. Gerdine, geographer, under the general direction of R. B. Marshall, chief geographer. Credit is given to the different levelmen in the introduction to each list. The office work of computation, adjustment, and preparation of lists was done mainly by S. S. Gannett, geographer, under the general direction of E. M. Douglas, geographer.

Classification.—The elevations are classified as precise or primary, according to the methods employed in their determination. For precise lines instruments and rods of the highest grade are used, each line is run in both forward and backward directions, and every precaution is taken to guard against error. The allowable divergence between the forward and the backward lines in feet is represented by the formula $0.017\sqrt{D}$, in which D is the distance in miles between bench marks. For primary lines standard Y levels are used; lines are run in circuits or are closed on precise lines, with an allowable closing error in feet represented by the formula $0.05\sqrt{D}$, in which D is the length of the circuit in miles, sufficient care being given the work to maintain this standard. For levels of both classes careful office adjustments are made, the small outstanding errors being distributed over the lines.

Bench marks.—The standard bench marks are of two forms. The first form is a circular bronze or aluminum tablet (*C* and *E*, Pl. I), $3\frac{1}{2}$ inches in diameter and one-fourth inch thick, having a 3-inch stem, which is cemented in a drill hole in solid rock, in the wall of some public building, in a bridge abutment, or in other substantial masonry structure. The second form (*F*, Pl. I), employed where masonry or rock is not accessible, consists of a hollow wrought-iron post $3\frac{1}{2}$ inches in outer diameter and 4 feet in length. It is split at the bottom and expanded to 10 inches in order to give a firm bearing on the earth and is set about 3 feet in the ground. A bronze or aluminum-bronze cap is riveted upon the top of the post. A third style of bench mark with abbreviated lettering (*B* and *D*, Pl. I) is used for unimportant points. This consists of a special copper nail $1\frac{1}{2}$ inches in length driven through a copper washer seven-eighths of an inch in diameter.

The tablets, as well as the caps on the iron posts, are appropriately lettered, and for cooperating States the fact of such cooperation is indicated by the addition of the State name (*G*, Pl. I). The numbers stamped on the bench marks described in the following pages represent the elevations to the nearest foot as determined by the levelman. These numbers are stamped with $\frac{1}{8}$ -inch steel dies on the tablets or post caps, to the left of the word "feet." The office adjustment of the notes and the reduction to mean sea level datum may so change some of the figures that the original markings are 1 or 2 feet in error. It is assumed that engineers and others who have occasion to use the bench-mark elevations will apply to the Director of the United States Geological Survey, at Washington, D. C., for the adjusted values, and will use the markings as identification numbers only.

Datum.—All United States Geological Survey elevations are referred to mean sea level, which is the level that the sea would assume if the influence of winds and tides were eliminated. This level is not the elevation determined from the mean of the highest and the lowest tides, nor is it the half sum of the mean of all the high tides and of the mean of all the low tides, which is called half-tide level. *Mean sea level is the average height of the water, all stages of the tide being considered.* It is determined from observations made by means of tidal gages placed at stations where local conditions, such as long narrow bays, rivers, and like features, will not affect the height of the water. To obtain even approximately correct results these observations must extend over at least one lunar month, and if great accuracy is desired they must extend over several years. At ocean stations half-tide level and mean sea level usually differ but little. It is assumed that there is no difference between the mean sea levels determined from observations in the Atlantic Ocean, the Gulf of Mexico, or the Pacific Ocean.

The connection with tidal stations for bench marks in certain areas that lie at some distance from the seacoast is still uncertain, and this fact is indicated by the addition of a letter or a word to the right of the word "Datum" on tablets or posts. For such areas corrections of published results will be made from time to time as the precise-level lines of the United States Geological Survey or other Government organizations are extended.

Topographic maps.—Maps of the following quadrangles, wholly or partly in Washington, have been published by the United States Geological Survey up to July 15, 1913. They may be obtained for 10 cents each, or (except as noted) \$3 for 50, on application to the Director of the Survey at Washington, D. C.

Beverly.	Portland.
Blaine.	Pullman.
Blalock Island.	Quincy.
Cedar Lake.	Red Rock.
Chelan.	Republic.
Chiwaukum.	Seattle.
Chopaka.	Snohomish.
Ellensburg.	Seattle land classification. ¹
Glacier Peak.	Skykomish.
Methow.	Snoqualmie.
Moses Lake.	Spokane.
Mount Adams.	Stehekin.
Mount Aix.	Stilaguamish.
Mount Hood (Oreg.-Wash.).	Sumas.
Mount Stuart.	Tacoma.
Mount Vernon.	Tacoma land classification. ¹
Okanogan.	Umatilla.
Oakesdale.	Winchester.
Osyoos.	Zillah.

PRECISE LEVELING.

Cedar Lake, Ellensburg, Mount Stuart, Pasco, Prosser, Snoqualmie, Tacoma, Wallula, Yakima, and Zillah quadrangles.

FRANKLIN, KING, KITTITAS, PIERCE, AND WALLA WALLA COUNTIES.

The elevations in the following list were determined by a double-rodded primary-level line extended from a tide gage at Tacoma and corrected to accord with the transcontinental precise-level line of the United States Coast and Geodetic Survey as adjusted in 1912, which redetermined the elevation of many of these bench marks.

The leveling was done by H. S. Crowe in 1898, except in the Snoqualmie quadrangle, which was done by H. K. Kalloch in 1897, and in the Mount Stuart quadrangle, which was done by F. L. Cole in 1896. Additional leveling was done in Tacoma quadrangle in 1913 by D. S.

¹ Shows wooded areas. No wholesale rate.

Birkett. An important result of this work was to check the elevation of Tacoma from Seattle by the connection at Auburn with the Coast and Geodetic Survey precise-level line. A closure error of +1.0 foot was adjusted, and the line Meeker Junction to South Prairie was corrected by a constant of -0.053 feet. Several bench marks established between Tacoma and South Prairie set by H. S. Crowe in 1898, including one at Orting, at the junction of a level line to Mount Rainier, were recovered. This new line corrected the original published values in the Twentieth Annual Report by small amounts but showed a remaining discrepancy between South Prairie and Green River of 0.9 foot in Crowe's line to be adjusted to agree with the 1912 adjustment value at Green River.

TACOMA QUADRANGLE.

[Latitude 47°-47° 30'; longitude 122°-122° 30'.]

From Tacoma southeast along Northern Pacific Ry. to Orting, thence northeast to Buckley.

	Feet.
Tacoma, city hall building, on top of coping of cornerstone; cross-----	110.240
Tacoma, northwest corner of Seventh Street and Pacific Avenue, southeast corner of city hall building, 2 feet above sidewalk; aluminum tablet stamped "1913"-----	109.965
Prescott, in front of station; top of rail-----	8.9
Reservation platform, at road crossing; top of rail-----	12.5
Milepost 5, 270 feet east of, in top stone of stone culvert, 1 foot from east end of stone, 10.7 feet from center of south track; copper plug stamped "21 T"-----	21.893
Puyallup, at Stewart and Meridian streets, northeast corner of build- ing of J. P. Stewart & Sons, in fifth row of bricks above corner- stone; aluminum tablet stamped "49 T"-----	48.712
Meeker Junction; top of rail-----	60.7
Alderton, 150 feet east of water tank, 23 feet north of center of wagon road, 36.6 feet from center of track, 4.7 feet from south corner of east-west fence; iron post stamped "89 T"-----	89.136
Orting, in front of station; top of rail-----	192.0
Orting, 150 feet west of water tank, 34.2 feet from center of track on south side, 3 feet west of telegraph pole, 53 feet west of center line of Bridge Street; iron post stamped "198 T"-----	197.974
South Prairie, in front of station; top of rail-----	428.4
South Prairie, 50.7 feet east of northeast corner of station, 2.3 feet west of telegraph pole, 19.1 feet from center of track; iron post stamped "430 T"-----	429.706
Buckley, at River Avenue and Main Street, southwest corner of Col- lins & McNichol's butcher shop; aluminum tablet stamped "723 T"-----	722.844
Buckley, in front of station; top of rail-----	723.7

From Tacoma southeast along Northern Pacific Ry. to Meeker Junction, thence north to Auburn.

Tacoma, at A and Thirteenth streets, opposite Puget Sound Traction, Light & Power Co.'s car barns, point midway in block, west side of street, top of trapdoor in sidewalk; painted square-----	64.54
---	-------

	Feet.
Tacoma, 0.2 mile southwest of Union Station, intersection of north-south brick-paved street with Northern Pacific Ry. tracks, west side of street, top of granite curbstone; painted square-----	12. 80
Tacoma, 2.1 miles southeast of, 300 feet northwest of engine room to Peterman Mill, west edge of Northern Pacific Ry. right of way, in base of telegraph pole; spike marked "U. S. B. M. No. 3"-----	9. 47
Tacoma, 3 miles southeast of, west end of Oregon-Washington R. R. & Navigation Co.'s steel bridge over Puyallup River, south side, top of concrete pier; aluminum tablet stamped "18 1913"-----	16. 036
Milepost 36, 400 feet southeast of, east side of Northern Pacific Ry. right of way, in base of brace to telegraph pole; spike marked "U. S. B. M. No. 5"-----	20. 66
Milepost 35, 1,100 feet southeast of, west edge of right of way, in base of telegraph pole; spike marked "U. S. B. M. No. 6"-----	16. 84
Milepost 34, opposite, on west side of Northern Pacific Ry. right of way, in base of telegraph pole; spike marked "U. S. B. M. No. 7"-----	22. 09
Milepost 33, 170 feet west of, south side of right of way, in base of telegraph pole; spike marked "U. S. B. M. No. 8"-----	28. 43
Puyallup, 2.4 miles west of, steel bridge over creek, east abutment, north end; aluminum tablet stamped "31 1913"-----	31. 175
Milepost 32, 210 feet east of, south side of right of way, in base of telegraph pole; spike marked "U. S. B. M. No. 10"-----	33. 43
Milepost 31, 110 feet west of, south side of right of way, in base of telegraph pole; spike marked "U. S. B. M. No. 11"-----	41. 72
Milepost 30, 210 feet east of, south side of right of way, in base of telegraph pole; spike marked "U. S. B. M. No. 13"-----	47. 79
Meeker Junction, 700 feet west of, 14 feet south of track, northeast corner of water tank, on top of concrete pier; chiseled square-----	60. 206
Meeker Junction, 0.7 mile northeast of, 0.5 mile southwest of Northern Pacific Ry. bridge over Puyallup River, north side of tracks, in concrete base of semaphore; chiseled square-----	63. 69
Sumner, 0.4 mile southwest of, north end of Northern Pacific Ry. steel bridge over Puyallup River, in concrete abutment on east side; aluminum tablet stamped "69 1913"-----	69. 830
Milepost 28, 1,000 feet northeast of, 30 feet west of tracks, in base of telegraph pole; spike marked "U. S. B. M. No. 17"-----	65. 60
Milepost 27, 300 feet north of, on concrete base of semaphore; chiseled square-----	62. 12
Milepost 26, 30 feet north of, 30 feet west of tracks, in base of telegraph pole; spike marked "U. S. B. M. No. 19"-----	56. 96
Milepost 25, west side of tracks, top of post; copper nail-----	82. 68
Stuck River steel bridge (Northern Pacific Ry.), 0.6 mile south of, 0.6 mile north of milepost 25, west side of track, on concrete base of semaphore; chiseled square-----	91. 01
Auburn, 2.9 miles south of, south end of Northern Pacific Ry. bridge over Stuck River, on east side, in concrete abutment; aluminum tablet stamped "100 1913"-----	100. 263
Auburn, 2.2 miles south of, 260 feet south of milepost 23, west side of Northern Pacific Ry. tracks, on concrete base of semaphore; chiseled square-----	103. 73
Milepost 22, 12 feet north of, south end of emergency rail stand, on top; copper nail-----	99. 25

	Feet.
Auburn, 0.3 mile south of, nearly due west of main line of Northern Pacific Ry. steel bridge over Green River, east side of double track, on concrete base of semaphore; chiseled square-----	84. 27
Auburn, 73 meters north of small Northern Pacific Ry. station, in Gilmore's yard, about 20 meters northeast of his house, 2 meters west of fence inclosing his yard, 14.35 meters from nearest rail; bottom of square hole in top of granite post marked "U. S. $\square$ B. M." (C. & G. S. b. m. M)-----	74. 191
From Meeker Junction southeast along Northern Pacific Ry. to Orting, thence northeast along same road to South Prairie.	
Milepost 33, 0.3 mile east of, west side of right of way, in base of telegraph pole; spike marked "U. S. B. M. No. 28"-----	65. 07
Milepost 32, 0.1 mile east of, north side of right of way, in base of brace to telegraph pole; marked "U. S. B. M. No. 27"-----	77. 10
Milepost 31, 255 feet southeast of, in base of mail crane; copper nail marked "U. S. B. M. No. 28"-----	89. 57
Alderton, 150 feet east of water tank, 23 feet north of center of wagon road, 36.6 feet from center of track, 4.7 feet from south corner of east-west fence; iron post stamped "89 T"-----	89. 136
Milepost 30, 220 feet south of, east side of right of way, in base of telegraph pole; spike marked "U. S. B. M. No. 30"-----	106. 57
McMillin, 620 feet south of milepost 29, east side of right of way, in base of telegraph pole; spike marked "U. S. B. M. No. 31"-----	122. 88
McMillin, 1 mile southeast of, south end of Northern Pacific Ry. steel bridge over South Fork of Puyallup River, on east side in concrete abutment; aluminum tablet stamped "131 1913"-----	130. 550
Milepost 27, 390 feet south of, east side of right of way, in base of telegraph pole; spike marked "U. S. B. M. No. 33"-----	151. 42
Milepost 26, 50 feet southeast of, east side of track, in base of telegraph pole; spike marked "U. S. B. M. No. 34"-----	176. 38
Orting, Boatman store building, middle section of, on concrete sill; chiseled square-----	195. 31
Milepost 24, 400 feet west of, west end of wooden trestle 241, in foundation; spike marked "U. S. B. M. No. 13"-----	225. 18
Milepost 23, 60 feet east of, west end of trestle 236, in top of wooden foundation; copper nail marked "U. S. B. M. No. 38"-----	272. 46
Crocker, 0.4 mile northeast of, east end of Northern Pacific Ry. steel bridge over Puyallup River, north side, in concrete abutment; chiseled square marked "U. $\square$ S."-----	311. 10
Milepost 21, in top of; copper nail marked "U. S. B. M. No. 40"-----	319. 08
Milepost 20, 220 feet north of, west side of right of way, in base of brace to telegraph pole; spike marked "U. S. B. M. No. 41"-----	344. 52
Milepost 19, in base of; spike marked "U. S. B. M. No. 42"-----	393. 90
South Prairie, intersection of Emery and First streets, 150 feet south of tracks, across street from Knights of Pythias hall, in concrete sidewalk; chiseled square-----	428. 68

CEDAR LAKE QUADRANGLE.

[Latitude 47°-47° 30'; longitude 121° 30'-122°.]

From Buckley along Northern Pacific Ry. to Palmer Junction.

Enumclaw, 77.9 feet west of southwest corner of station, 3.1 feet east of mail crane, 31 feet west of center line of Griffin Avenue; iron post stamped "742 T"-----	742. 144
---	----------

	Feet.
Enumclaw, in front of station; top of rail-----	742. 0
Veazie, 76.6 feet from main track, 15 feet from center of side track, on north side of main line, 50 feet east of road crossing; iron post ¹ stamped "777 T"-----	777. 478
Palmer, 96.4 feet west of southwest corner of station, 5 feet west of mail crane, 10.4 feet from center of track, 20 feet west of center of road crossing; iron post stamped "882 T"-----	882. 328

From Palmer southeast along Northern Pacific Ry. to Hot Springs.

Green River, sixth crossing, 25 feet west of tunnel 7, on north corner of east bulkhead pier of steel bridge 210; copper bolt stamped "1046 T"-----	1, 046. 721
Canton, in front of station; top of rail-----	1, 208. 7
Canton, 8.2 feet east of east end of railroad toolhouse, 2 feet west of telegraph pole; iron post stamped "1205 T"-----	1, 208. 113
Maywood, 2.2 feet east of southeast corner of section house, 4.1 miles east of Canton; iron post stamped "1335 T"-----	1, 336. 081
Hot Springs, 56 feet east of southeast corner of station, 17.6 feet north of center of track, 3 feet west of telegraph pole; iron post stamped "1531 T" ² -----	1, 532. 139
Hot Springs, in front of station; top of rail-----	1, 930. 6

SNOQUALMIE QUADRANGLE.

[Latitude 47°-47° 30'; longitude 121°-121° 30'.]

From Hot Springs east along Northern Pacific Ry. to Clealum.

Lester, in top of concrete pedestal at southwest corner of Northern Pacific coal dock, on southwest corner of pedestal; cross cut (established by Northern Pacific Ry. Co. 1913)-----	1, 614. 69
Lester, on south window in east side of boiler house operating fuel-oil supply; check bench mark established by Northern Pacific Ry. Co. 1913-----	1, 619. 39
Lester, in front of station; top of rail-----	1, 610. 7
Stampede, 75 feet southwest of station, 10 feet northwest of bluff on Deer Creek; iron post stamped "2776 T" ² -----	2, 777. 350
Stampede tunnel, at east end of; top of south rail at east end of snow shed-----	2, 834. 2
Martin, 40 feet east of station and 20 feet south of main track, 6 feet east of telegraph pole, on bank above track; iron post stamped "2782" ² -----	2, 784. 050
Martin, in front of station; top of south rail-----	2, 776. 7
Snoqualmie wagon road, 3.6 miles west of Easton, at intersection with Northern Pacific Ry., 12 feet north of track, 15 feet east of wagon road; iron post stamped "2304"-----	2, 305. 848
Easton, 90 feet northwest of northwest corner of station, 110 feet north of track at water tank, 80 feet south of general store and post office; iron post stamped "2166"-----	2, 167. 671
Big Creek, 25 feet north of west pillar of signpost at siding, 35 feet north of main track, 150 feet east of trestle 56 over small creek; iron post stamped "2103"-----	2, 104. 790

¹ Could not be found in 1911.

² Bench mark found loose in 1904; reset in concrete.

	Feet.
Nelson, 205 feet south of track, 200 feet northeast of house of Peter Nelson, 410 feet southwest by west from signboard "Nelson," 3 feet east of fence corner and 12 feet west of large pine tree; iron post stamped "2030"-----	2,081.554

MOUNT STUART QUADRANGLE.

[Latitude 47°-47° 30'; longitude 120° 30'-121°.]

From Clealum southeast along Northern Pacific Ry. to Ellensburg.

Clealum, in front of station; top of rail-----	1,908.9
Clealum, 84.5 feet west of center of front door of Reed House, 81.5 feet southeast from southeast corner of Clealum Mercantile Co.'s store, in SW. $\frac{1}{4}$ sec. 28, T. 20 N., R. 15 E.; iron post stamped "1905" ¹ -----	1,907.250
Teanaway, in front of station; top of rail-----	1,836.3
Teanaway, 200 feet north of station, on section line 30 feet south of corner of secs. 4, 5, 32, and 33, T. 19 N., R. 16 E.; iron post stamped "1838"-----	1,838.464
Bristol, west side of NW. $\frac{1}{4}$ sec. 13, T. 19 N., R. 16 E., 40 feet southwest of southwest corner of section house, under signboard "Bristol," 14.3 feet north of center of track; iron post stamped "1784"-----	1,785.147
Dudley, in front of station; top of rail at joint-----	1,703.9
T. 19 N., R. 17 E., on south side of SE. $\frac{1}{4}$ sec. 34, 1.5 miles northwest of Thorp, at first road crossing, 140 feet north of railroad, close to wagon road; iron post stamped "1658"-----	1,659.111
Thorp, in front of station; top of rail-----	1,635.5
Thorp, in NE. $\frac{1}{4}$ sec. 11, T. 18 N., R. 17 E., at intersection of Main Street and Taneum Creek road; iron post stamped "1634 T"-----	1,634.354
Milepost 122, 1,830 feet east of, on cross on sandstone inside of frame tower on north side of railroad track and east of road crossing; stone stamped "U. S.+BASE"-----	1,584.925
Masons; center of track at road crossing-----	1,561.7

ELLENSBURG QUADRANGLE.

[Latitude 46° 30'-47°; longitude 120° 30'-121°.]

From Ellensburg southeast along Northern Pacific Ry. to Thrall.

Ellensburg, in front of telegraph office, top of rail-----	1,510.6
Ellensburg, in top of brick pier with stone coping in State Normal School grounds; bronze tablet stamped "1571 T"-----	1,571.604
Thrall siding; base of rail center of main line-----	1,442.2

From Elah southwest along Northern Pacific Ry. to North Yakima, thence southeast to Yakima.

Naches River, opposite where it empties into Yakima River, in center of west end of stone pier of railroad bridge; copper plug stamped "1090 T"-----	1,090.493
North Yakima, opposite station, in pilaster of northwest corner of entrance to city hall on Front Street; aluminum tablet stamped "1087 T"-----	1,087.392
North Yakima, in front of station; top of rail-----	1,087.5

¹ This bench mark is now under the band stand.

YAKIMA QUADRANGLE.

[Latitude 46° 30'–47°; longitude 120°–120° 30'.]

From Thrall south along Northern Pacific Ry. to Roza.

	Feet.
Umtanum, 85 feet southwest of section house, 56 feet southwest of center of track; iron post stamped "1350 T"-----	1, 350. 194
Umtanum, in front of section house; top of rail-----	1, 349. 0
Roza, opposite station, 198 feet west of telegraph office, 0.25 mile east of milepost 148; iron post stamped "1249 T"-----	1, 249. 440
Roza, in front of station; top of rail-----	1, 249. 3

From Roza south along Northern Pacific Ry. to Selah.

Selah, 2.6 feet southwest of west corner of fence around section house, 18 feet from center of main track; iron post stamped "1147 T"---	1, 147. 743
Selah, in front of section house; base of rail-----	1, 148. 9

From Yakima south along Northern Pacific Ry. to Parker.

Yakima, in front of telegraph office; base of rail-----	980. 5
Yakima, 1.25 miles north of bridge over Yakima River, 110 feet west of wagon road, 100 feet south of intersection of Fort Simcoe and Toppenish roads, 125 feet east of main line of Northern Pacific Ry., at corner of fence at cattle crossing; iron post stamped "937 T"---	937. 835

ZILLAH QUADRANGLE.

[Latitude 46°–46° 30'; longitude 120°–120° 30'.]

From Parker southeast along Northern Pacific Ry. to Mabton.

Parker siding, in front of signboard; base of rail-----	923. 2
Wapato, 180 feet east of east end of station, 50.3 feet south of center of track, at corner of fence; iron post stamped "855 T"-----	855. 323
Wapato, in front of station; top of rail-----	859. 3
Toppenish, in front of station; base of rail-----	757. 4
Toppenish, 108 feet east from northeast corner of station, 25 feet south of center of main track, near corner of fence; iron post stamped "755 T"-----	755. 615
Road crossing, 30 feet south of center of road, 37 feet from center of track, 3 feet north of fifth post along west fence line; iron post stamped "717 T"-----	716. 882
Satus, 26 feet southwest of southwest corner of platform of station, 30 feet south of center of track, 2.5 feet north of first telegraph pole south of station; iron post stamped "674 T"-----	674. 195
Satus, in front of station; top of rail-----	675. 5
Milepost 198, opposite, 9 feet north of fence, 116 feet south of center of track; iron post stamped "717 T"-----	716. 566
Mabton, at water tank, 2 feet east of fence around railroad section house, 35 feet north of center of track, 40 feet west of center line of wagon road at crossing of railroad; iron post stamped "715 T"---	715. 412

WALLULA QUADRANGLE.

[Latitude 46°–46° 30'; longitude 118° 30'–119°.]

From Pasco south along Northern Pacific Ry. to Hunts Junction, thence along Oregon-Washington R. R. & Navigation Co.'s line to Oregon-Washington State line 6.2 miles southwest of Wallula.

Milepost 236, 90 feet northeast of, 42 feet east of center of track, 5 feet north of telegraph pole; iron post stamped "342 A"-----	343. 387
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	Feet.
Hunts Junction, 120 feet southeast of milepost 240, 36 feet east of track, 5 feet east of telegraph pole; iron post stamped "341 A"-----	343. 011
Wallula, 18 feet north of center of station, 290 feet north of south end of bridge, 27 feet south of center of track at Northern Pacific Ry. connection; iron post stamped "322 A"-----	323. 568
Milepost 208, 150 feet east of, 570 feet east of State line post, 18 feet south of track; iron post stamped "318 A"-----	319. 393

NOTE.—The following additional bench marks in the Wallula quadrangle were placed by the Reclamation Service in 1904, the primary leveling being done by H. Bucher.

From Pasco east along Snake River and county road and across country to sec. 11, T. 9 N., R. 31 E., thence northwest to milepost 221, Northern Pacific Ry. (part of line).

T. 9 N., R. 30 E., NE. $\frac{1}{4}$ sec. 36, on highest point of hill about 500 feet north of road, triangulation station "Snake Signal"; iron post stamped "482 T"-----	481. 938
T. 9 N., R. 31 E., south center of sec. 20, 60 feet north of road, 240 feet west of the east (upstream) end of a grove of locust trees situated on a flat between Snake River and the hills; iron post stamped "356 T"-----	355. 877
T. 9 N., R. 31 E., NW. $\frac{1}{4}$ sec. 23, 250 feet from Snake River, on west side of county road, 20 feet south of private gate in fence; iron post stamped "408 T"-----	407. 794
T. 9 N., R. 31 E., south quarter corner of sec. 11, 10 feet east of junction of roads, 2 $\frac{1}{2}$ feet from wire fence, on north side of road; iron post stamped "668 T"-----	667. 581
T. 9 N., R. 31 E., NE. $\frac{1}{4}$ sec. 4, 0.8 mile northeast of junction of roads at bench mark 668 T, on top of sand ridge, triangulation station "No. 7"; iron post stamped "752 T"-----	751. 883
T. 10 N., R. 30 E., east-central part of sec. 25, on top of sand ridge, triangulation station "No. 6"; iron post stamped "556 T"-----	556. 487

From triangulation station No. 6 north and west to Eltopia.

T. 10 N., R. 31 E., 500 feet southeast of northwest corner of sec. 18, on ridge on west side of coulee; iron post stamped "675 T"-----	675. 363
T. 11 N., R. 30 E., 550 feet a little west of north of southeast corner of, on sand ridge on west side of coulee; iron post stamped "708 T"-----	707. 663
T. 11 N., R. 30 E., 1,250 feet west of north of southeast corner of SE. $\frac{1}{4}$ sec. 25, 2 miles south of point where road from Eltopia to Ryegrass Wells turns east to go up over high ridge, on ridge; iron post stamped "592 T"-----	591. 937

From sec. 11, T. 9 N., R. 31 E., northeast along section roads to point near Fishhook Ferry, thence north and west to Eltopia.

T. 9 N., R. 32 E., northwest corner of sec. 6, on south side of road, by large fence post on east side of gate; iron post stamped "781 T"-----	780. 503
T. 10 N., R. 32 E., at southeast corner of sec. 20, on north side of road, 2 feet from wire fence, 15 feet west of crossroads; iron post stamped "795 T"-----	795. 160

	Feet.
T. 10 N., R. 32 E., in south center of sec. 14, 1.3 miles northwest of Fishhook Ferry on Snake River, on north side of road, near signboard between forks of road; iron post stamped "738 T"-----	737. 818
T. 10 N., R. 32 E., north-central part of sec. 3, 50 feet west of road at summit of ridge; iron post stamped "1136 T"-----	1, 135. 570
T. 11 N., R. 32 E., near center of sec. 22, 3 feet east of signboard between forks of road, marked "Fishhook Ferry 6 miles" pointing down road to south, road to southeast leads to Paradise Ferry; iron post stamped "993 T"-----	992. 943
T. 11 N., R. 32 E., 900 feet north of southwest corner of sec. 17; 200 feet east of dim road turning off down coulee, on south side of road by stone and stake marked "R. A.," in coulee north of Ryegrass Wells; iron post stamped "811 T"-----	810. 612
T. 11 N., R. 31 E., north-central part of sec. 14, first post north of fence corner on north side of road, in bottom of large coulee, smaller coulee with road comes in from the north; iron post stamped "680 T"-----	680. 156
T. 11 N., R. 31 E., south-central part of sec. 7, 2.7 miles southeast of Eltopia, 40 feet east of forks of road, on highest point of ridge, 15 feet north of road; iron post stamped "835 T"-----	835. 042

At Fishhook Ferry.

Fishhook Ferry, 120 feet east of Oregon R. R. & Navigation Co.'s track, 10 feet southeast of telegraph pole on hillside, telegraph pole is opposite crossing sign on railroad where road leads down to Fishhook Ferry landing; iron post-----	423. 949
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PROSSER QUADRANGLE.

[Latitude 46°-46° 30'; longitude 119° 30'-120°.]

From Mabton east along Northern Pacific Ry. to Kiona.

Byron siding, 350 feet south of milepost 208, near signboard "Mabton 7 miles, Globe 9 miles, Bickerton 27 miles," 150 feet from center of track, 2 feet from fence corner; iron post stamped "696 T"-----	696. 580
Prosser, 540 feet west of station, in corner of fence of railroad reservation at Sixth Street, in southwest corner of Block B, lot 8; iron post stamped "661 T"-----	661. 473
Gibbon, 171 feet north of station platform, 150 feet north of center of main track, 2 feet south of wire fence; iron post stamped "627 T"-----	627. 467
Chandler siding, 1.6 feet from southwest corner of fence around railroad section house, 15 feet from center of main line; iron post stamped "534 T"-----	534. 501

PASCO QUADRANGLE.

[Latitude 46°-46° 30'; longitude 119°-119° 30'.]

From Kiona east along Northern Pacific Ry. to Pasco.

Kiona, 12 feet west of west end of platform, 12 feet south of main track, in east corner of fence around fruit orchard in small park on railroad reservation; iron post stamped "515 T"-----	514. 907
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	Feet.
Klona, in front of station; base of rail-----	514.9
Milepost 235, 31 feet north of; iron post stamped "640 T"-----	640.472
Badger, in front of station; top of rail-----	681.2
Through cut, south end of, 3 feet east of telegraph pole, 120 feet southeast of milepost 240; iron post stamped "605 T"-----	605.243
Relief siding, 2 feet east of first telegraph pole southwest of signboard, 920 feet west of mileboard 246; iron post stamped "567 T"-----	567.067
Kennewick, 95 feet southeast of southeast corner of station, 51 feet north of center of track; 1.7 feet west of corner of fence around section house; iron post stamped "362 T"-----	361.917
Kennewick, in front of station; top of rail-----	362.0
Pasco, in front of telegraph office; top of rail-----	381.3

NOTE.—The following additional bench marks in the Pasco quadrangle were established by the Reclamation Service in 1904, the leveling being done by H. Bucher.

From Pasco northwest up Columbia River to northwest corner T. 9 N., R. 29 E., thence northeast to milepost 221, Northern Pacific Ry.

T. 9 N., R. 29 E., northeast corner of sec. 27, south side of road, 2 feet from fence; iron post stamped "362 T"-----	361.964
Timberman's Ferry, 0.3 mile from, about center of sec. 18, T. 9 N., R. 29 E., on east side of road, 1 foot from fence at fence corner at south corner of field; iron post stamped "387 T"-----	387.059
T. 9 N., R. 29 E., northwest corner of, on west side of road 3 feet north of fence corner; iron post stamped "463 T"-----	463.083
T. 10 N., R. 29 E., 1,600 feet a little south of west from northwest corner of sec. 30, on ridge 800 feet east of Columbia River (post marks the position of guidepost No. 93); iron post stamped "509 T"-----	508.570
T. 10 N., R. 29 E., 620 feet south by 220 feet east of northwest corner of sec. 28, on top of sand ridge, marks position of guidepost No. 22; iron post stamped "513 T"-----	513.443
T. 10 N., R. 29 E., near center of sec. 23, on highest point of ridge, West Glade triangulation station guidepost No. 18; iron post stamped "607 T"-----	606.657

From Pasco east along Snake River and county road and across country to sec. 11, T. 9 N., R. 31 E., thence northwest to milepost 221, Northern Pacific Ry. (part of line).

T. 10 N., R. 30 E., southwest corner of sec. 15, 2 feet from fence, 3 feet north of fence corner; iron post stamped "687 T"-----	686.579
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PRIMARY LEVELING.

Asotin, Oakesdale, Pullman, and Spokane quadrangles.

GARFIELD, SPOKANE, AND WHITMAN COUNTIES.

The elevations in the following list were determined by primary leveling extended from Spokane and accord with a new adjustment which raises the formerly published elevations at Spokane 1 foot.

The leveling was done as follows: Spokane quadrangle in 1898 by H. S. Crowe and J. H. Carlock, and in 1903 by E. M. Fry; Oakesdale, Pullman, and Asotin quadrangles in 1903 by E. M. Fry.

SPOKANE QUADRANGLE.

[Latitude 47° 30'—48°; longitude 117°—117° 30'.]

From Marshall northeast along Northern Pacific Ry. to Spokane.

	Feet.
Marshall, 100 feet northwest of railroad crossing and 100 feet east of post-office building; iron post stamped "2130 T"-----	2, 131. 114
Milepost Wallula 157, Hope 89, 660 feet south of, 48 feet west of center of track, 2 feet south of fence, 90 feet southwest of cattle guard; iron post stamped "1857 T"-----	1, 858. 285
Spokane, in front of Northern Pacific Ry. station; top of rail-----	1, 910. 4
Spokane, in front of Great Northern Ry. station; top of rail-----	1, 880. 9
Spokane, center of astronomic pier in courthouse grounds; aluminum tablet stamped "1891 T"-----	1, 891. 954
Spokane, in southeast corner of brick wall of station, in second course of brick above stone foundation, fourth row west from corner; bronze tablet stamped "1814 T"-----	1, 914. 628

From Spokane east along Northern Pacific Ry. to State line.

Milepost W. 166, H. 80, 60 feet northwest of, 40 feet north of railroad; iron post stamped "1953 T"-----	1, 953. 856
Trent, 2 miles east of, 100 feet north of railroad at road crossing; iron post stamped "2041 T"-----	2, 042. 323
Otis siding, 0.5 mile east of, at northwest corner of fence at road crossing, 50 feet north of center of track; iron post stamped "2083 T"-----	2, 083. 758

From Spokane north along Spokane Falls & Northern (Great Northern) Ry. to Dagoon, thence along highway to Chattaroy.

Mead, 100 feet southwest of station, in line with telegraph poles; iron post stamped "1906 S"-----	1, 906. 628
Dagoon, 90 feet west of station, 20 feet east of road; iron post stamped "1745 S"-----	1, 746. 372
Chattaroy post office, 1,500 feet east of, 30 feet southwest of Davis mill road crossing Great Northern Ry., in center of boulder 60 by 40 inches, 2 feet above ground; aluminum tablet stamped "1799 S"-----	1, 799. 598

From Chattaroy along Great Northern Ry. to point 1 mile north of Milan.

Milan, 220 feet southeast of station, 160 feet northwest of post office, in fork of roads; iron post stamped "1779 S"-----	1, 780. 427
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From point near Milan east and south along highway via Medler, Fish Ranch, Spirit Lake, and Fish Lake to Rathdrum (part of line).

Elk post office, 4 miles east of, 60 feet northeast of fork of roads, 480 feet south of corner of secs. 13, 14, 23, and 24, T. 29 N., R. 44 E., in boulder 60 by 40 inches, 20 inches above surface of ground; aluminum bolt stamped "U. S. G. S. 2468 ft. S. B. M."-----	2, 468. 997
Elk post office, 7.5 miles east of, on summit of road 40 feet south of bend, 160 feet west of precipitous break in ridge, in boulder 40 by 30 inches, 20 inches above ground; aluminum bolt stamped "U. S. G. S. 3112 ft. S. B. M."-----	3, 113. 454
Washington-Idaho State line, 120 feet south of, 240 feet north of old bridge over Blanchard Creek, 20 feet north of road, in center of boulder 40 by 30 inches, 20 inches above ground; aluminum tablet stamped "2382 S"-----	2, 382. 760

From Spokane north along highway via Tomkinson triangulation station to Mead.

	Feet.
Spokane, 2.5 miles north of, 20 feet east of fork of road, 280 feet northeast of spring west of road, in root of pine tree; nail-----	1, 903. 10
Tomkinson triangulation station, about 800 feet southwest of Thomas Tomkinson's house, 400 feet west of road, about 7 miles north of Spokane, in center of stone post; aluminum tablet stamped "2372 S"-----	2, 372. 766
Mead, 2.5 miles southwest of, 70 feet northeast of junction of Mead road with Spokane-Clarks Mill road, 10 feet west of road, in 12-inch pine tree; spike-----	1, 953. 04
Mead, 0.5 mile southwest of, north of forks of road to Spokane, in root of 24-inch pine tree; nail-----	1, 925. 86

From Dragoon west and south along highway to Tomkinson triangulation station.

Wayside, in northwest corner of Odd Fellows Hall, 2 feet above ground, in stone wall; aluminum tablet stamped "2065 S"-----	2, 065. 877
Wayside, 5 miles south of, 20 feet north of forks of road, west of road, in root of 14-inch pine tree; nail-----	2, 032. 30
Wayside, 9 miles southwest of, 80 feet east of road, in sec. 28, T. 27 N., R. 42 E., in center of boulder 60 by 40 inches, 2 feet above ground; aluminum bolt stamped "U. S. G. S. 2889 ft. S. B. M."-----	2, 890. 260

From Chattaroy east along highway to Davis Mill, thence south and west to point near Mead.

Chattaroy, 5 miles east of, 120 feet northwest of corner of secs. 20, 21, 28, and 29, T. 27 N., R. 44 E., 100 feet northwest of forks of road, in boulder 60 by 36 inches, 2 feet above ground; aluminum bolt stamped "U. S. G. S. 2065 ft. S. B. M."-----	2, 065. 772
Davis house, 7 miles south of, 60 feet southwest of road crossing, in SW. $\frac{1}{4}$ sec. 27, T. 27 N., R. 44 E.; iron post stamped "1922 S"-----	1, 922. 942
Mead, 2.5 miles northeast of, at northeast corner of crossroads, in Tps. 26 and 27 N., Rs. 43 and 44 E.; iron post stamped "1881 S"---	1, 882. 245

From point 4 miles northeast of Mead along highway south and east by circuitous route to State line.

Newman Lake, 4.5 miles west of, 30 feet north of forks of road at top of hill, in root of 10-inch pine tree west of road; tack-----	2, 733. 21
Newman Lake, 0.5 mile north of, 60 feet southeast of schoolhouse, 8 feet north of road; iron post stamped "2151 S"-----	2, 152. 256
Newman Lake, water surface-----	2, 131. 0
Newman Lake, 0.5 mile east of, 3 miles north of Northern Pacific Ry., 30 feet south of forks of road, 1,000 feet east of house, in center of boulder 30 by 20 inches, 1 foot above ground; aluminum bolt stamped "U. S. G. S. 2147 ft. S. B. M."-----	2, 147. 886

From point 7 miles northeast of Mead south along highway to Northern Pacific Ry.

Pleasant Prairie, center of crossroads; iron post stamped "2431 S"---	2, 432. 893
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From Chattaroy north along highway to point near Milan.

	Feet.
Chattaroy, 500 feet south of, 4 feet north of road, in top of stone 20 by 10 inches, 6 feet above ground; cut cross-----	1, 702. 17
Chattaroy, 4.8 miles north of, northeast corner of forks of road, in top of bowlder 10 by 8 inches, 6 inches above ground; cross-----	1, 860. 94

From Wayside along highway north to Deer Park, thence southeast along Spokane Falls & Northern (Great Northern) Ry. to Dragoon.

Wayside, 4 miles northwest of, 10 feet northeast of corner of secs. 27, 28, 33, and 34, T. 28 N., R. 42 E.; iron post stamped "2093 S"---	2, 094. 167
Deer Park, southeast corner of crossroads at station, 70 feet southeast of post office, 130 feet east of Spokane Falls & Northern Ry.; iron post stamped "2117 S"-----	2, 118. 021
Buckeye, in front of station; top of rail-----	1, 964. 70

From Deer Park northeast along highway via West Branch post office to point 1 mile north of Milan.

Corner of secs. 19, 24, 25, and 30; top of stone-----	2, 222. 18
Deer Park, 4.5 miles northeast of, 50 feet south of forks of roads, 80 feet west of county road, 170 feet northwest of corner of secs. 19, 20, 29, and 30, T. 29 N., R. 43 E.; iron post stamped "2268 S"---	2, 269. 467
Westbranch, 200 feet north of post office, 30 feet west of bridge over flume, 3 feet north of road, in top of bowlder 48 by 36 inches, 1 foot above ground; aluminum bolt stamped "U. S. G. S. 1906 ft. S. B. M."-----	1, 907. 860

From point near Otis along highway south 3 miles, thence east via Liberty Lake to State line, thence north to Northern Pacific Ry.

Liberty Lake, 500 feet north of, 100 feet west of schoolhouse, 20 feet east of road; iron post stamped "2098 S"-----	2, 099. 461
Liberty Lake; water surface-----	2, 054. 0

From southeast corner of sec. 18, T. 25 N., R. 45 E., south along highway 3 miles, thence northwest along highway and railroad to Spokane.

Sprague Avenue road, 2.2 miles southwest of, 130 feet north of forks of road, 60 feet northeast of schoolhouse; iron post stamped "2131 S"-----	2, 131. 575
Sprague Avenue road, 4.8 miles southwest of, 100 feet south of forks, 4 feet east of road, in root of 30-inch pine tree; spike-----	2, 331. 58
East Spokane, 80 feet west of post office, 20 feet south of road, 160 feet south of track; iron post stamped "1933 S"-----	1, 933. 941

From East Spokane southeast along track of Oregon-Washington R. R. & Navigation Co. to Buckley.

Chester, 200 feet northwest of section house, 30 feet north of fork of roads, 60 feet north of track; iron post stamped "2011 S"-----	2, 011. 761
Mica, in front of station; top of rail-----	2, 479. 72
Mica, 250 feet east of post office, 100 feet west of track, 80 feet south of fork of road, in center of bowlder 50 by 30 inches, 30 inches above ground; aluminum bolt stamped "U. S. G. S. 2478 ft. S. B. M."-----	2, 479. 426

Feet.

Freeman, 1.8 miles southeast of, 60 feet south of road crossing, 50 feet east of forks, 200 feet southwest of church; iron post stamped "2600 S"----- 2, 601. 306

From Olsen switch east along highway to State line.

W. F. Horton's house, 50 feet south of road, 800 feet west of State line, in masonry in northeast corner; aluminum bolt stamped "U. S. G. S. 2690 ft. S. B. M."----- 2, 690. 742

From point 1.8 miles south of Freeman west along highway to Northern Pacific Ry., thence north to Marshall.

Oregon-Washington R. R. & Navigation Co.'s track, 3 miles west of, 20 feet south of fork of roads, at top of hill, in center of boulder 28 by 12 inches, even with ground; aluminum bolt stamped "U. S. G. S. 2512 ft. S. B. M."----- 2, 513. 128

Hangman Creek, 0.2 mile east of, 800 feet west of fork of road, south end of ridge, 20 feet north of road, in center of boulder 30 by 20 inches, even with ground; aluminum bolt stamped "U. S. G. S. 1927 ft. S. B. M."----- 1, 928. 364

Hangman Creek, 2.2 miles west of, at top of hill, 50 feet east of forks of road, 140 feet north of telephone line; iron post stamped "2454 S"----- 2, 455. 336

Palouse branch of Northern Pacific Ry., 0.2 mile north of milepost 4, 80 feet east of road crossing, 40 feet east of small bridge, 20 feet east of forks of road; iron post stamped "2272 S"----- 2, 273. 250

From Spokane west along Great Northern Ry. 4 miles.

Alta Vista, in front of station; top of rail----- 1, 823
Junction of Great Northern and Seattle & Lake Shore railroads, 0.8 mile west of, 30 feet southwest of point of curvature, in north face of boulder 12 by 10 feet, 10 feet above ground; aluminum bolt stamped "U. S. G. S. 1903 ft. S. B. M."----- 1, 904. 254

From junction of Great Northern and Seattle & Lake Shore railroads south 7 miles.

Junction, 7.0 miles south of, 130 feet east of road crossing, 80 feet east of track, in center of boulder 30 by 20 inches, 20 inches above ground; aluminum bolt stamped "U. S. G. S. 2267 ft. S. B. M."----- 2, 267. 558

From Marshall south along Northern Pacific Ry. to Garfield (part of line).

Marshall, 100 feet northwest of railroad crossing; iron post stamped "2130 S"----- 2, 131. 047
Milepost 4, 0.2 mile north of, 50 feet east of track; iron post stamped "2272 S"----- 2, 273. 091

From Lockwood south along track of Oregon-Washington R. R. & Navigation Co. to Rockford.

Lockwood, 200 feet southwest of church, 60 feet south of road crossing; iron post stamped "2600 S"----- 2, 601. 306

OAKESDALE QUADRANGLE.

[Latitude 47°-47° 30'; longitude 117°-117° 30'.]

From Marshall south along Northern Pacific Ry. to Garfield (part of line).	Feet.
Davis ranch, 1,500 feet south of, 50 feet west of track, north side of county road crossing; iron post stamped "2381 S"-----	2, 381. 977
Spangle, northeast corner of Main and Second streets, in brick building used as saloon, 4 feet from corner of building; bronze tablet stamped "2431 S"-----	2, 432. 417
Plaza, 200 feet west of station, 150 feet west of track, 200 feet south-east of post office, east side of Main Street; iron post stamped "2352 S"-----	2, 352. 520
Rosalia, in southeast corner of Bank of Rosalia building, 2 feet north of entrance door, 2 feet from ground; bronze tablet stamped "2236 S"-----	2, 236. 713
McCoys siding, 100 feet south of milepost 32, on opposite side of road from warehouse, 2 feet from fence; iron post stamped "2402 S"-----	2, 402. 947
Oakesdale, southwest corner of Main and First streets, in wall of Commercial State Bank building, 2 feet west of door and 2 feet above sidewalk; bronze tablet stamped "2464 S"-----	2, 464. 929
Belmont, 20 feet north of station, 50 feet east of track, near platform; iron post stamped "2502 S"-----	2, 502. 361
Garfield, 100 feet west of station, north side of Fourth Street, 5 feet from sidewalk; iron post stamped "2485 S"-----	2, 485. 220

From Rockford south along track of Oregon-Washington R. R. & Navigation Co. to Garfield.

Rockford, 150 feet northeast of station, 50 feet south of track, 5 feet from board sidewalk; iron post stamped "2376 S"-----	2, 376. 642
Fairfield, 100 feet south of station, 5 feet west of platform, near telegraph pole; iron post stamped "2559 S"-----	2, 559. 082
Fairfield, in front of station; top of rail-----	2, 561
Latah, 100 feet north of station, west side of platform, 10 feet west of track; iron post stamped "2442 S"-----	2, 442. 369
Latah, in front of station; top of rail-----	2, 444
Tekoa, northeast corner of brick building occupied by Tekoa Mercantile Co., at corner of Main and Fourth streets, $\frac{3}{4}$ feet from sidewalk, 1 foot from corner; aluminum tablet stamped "2537 S"-----	2, 537. 155
Seltice, 15 feet south of station, 20 feet north of track; iron post stamped "2528 S"-----	2, 528. 921
Farmington, 50 feet east of station, 20 feet south of track, at northwest corner of small park; iron post stamped "2629 S"-----	2, 629. 782
Garfield, in front of station; top of rail-----	2, 473

From Seltice west along track of Oregon-Washington R. R. & Navigation Co. to Sunset.

Thornton, 200 feet southeast of station, 30 feet west of grain warehouse No. 1, 10 feet east of track, at road crossing; iron post stamped "2297 S"-----	2, 297. 100
Sunset, 100 feet west of station, 10 feet west of wagon road, 25 feet north of track, 600 feet south of post office, at railroad crossing, near crossing post; iron post stamped "2127 S"-----	2, 127. 143

From point 1.5 miles south of Spangle east along highway to Fairfield.

	Feet.
Johns ranch, 200 feet northeast of house, south side of road, 2 feet from fence; iron post stamped "2506 S"-----	2,506.633

From Sunset southeast along highway to Garfield.

"Cash up" Davis ranch, 100 feet southeast of house (old store building), 100 feet southwest of granary and barn, at forks of Colfax-Oakesdale road; iron post stamped "2348 S"-----	2,348.904
Cottonwood schoolhouse, 1,000 feet east of, 50 feet west of Cottonwood church, at northwest corner of church yard; iron post stamped "2466 S"-----	2,466.793

From Thornton north along highway to Rosalia.

Horn schoolhouse, 200 feet west of, 600 feet north of Fisk house, at corner of school yard, at forks of road; iron post stamped "2417 S"-----	2,417.973
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From Cottonwood schoolhouse southeast along highway to Steptoe Butte.

Steptoe Butte, summit of, 5 feet east of southeast corner of old hotel, 20 feet east of cistern, in large bowlder; aluminum tablet stamped "3813 S"-----	3,613.956
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PULLMAN QUADRANGLE.

[Latitude 46° 30'–47°; longitude 117°–117° 30'.]

From Garfield south along track of Oregon-Washington R. R. & Navigation Co. to Pullman.

Palouse River, under railroad bridge; water surface June 27, 1903--	2,415.7
Palouse, 50 feet north of station, at north end of platform, 15 feet east of track, 200 feet south of milepost 59; iron post stamped "2432 S"-----	2,432.739
Fallon, 50 feet west of platform, 150 feet southwest of grain warehouse, 5 feet north of porch to post office and store, west side of county road; iron post stamped "2488 S"-----	2,489.386
Whelan, 3 feet south of southeast corner of station platform, 100 feet northwest of warehouse, at steps; iron post stamped "2510 S"-----	2,510.952

From Pullman east along Northern Pacific Ry. to Moscow.

Pullman Junction; rail at switch at junction of Lewiston branch and Genesee branch of Northern Pacific Ry-----	2,371
Washington-Idaho State line, 15 feet north of track, in base of sign-post "Washington-Idaho State line;" spike-----	2,534.13

From Pullman east along Northern Pacific Ry. to Genesee.

Chambers station, 1,000 feet south of platform, in northeast corner of stone foundation of public-school house; bronze tablet stamped "2561 S"-----	2,562.484
Johnson, corner of Main and Dean streets, in brick foundation of residence of J. M. Ellsworth, 10 feet east of door, 1.5 feet above ground; bronze tablet stamped "2628 S"-----	2,629.060

From Garfield southwest along track of Oregon-Washington R. R. & Navigation Co. to Diamond.

	Feet.
Palouse River; water surface June 10, 1903-----	2, 196
Elberton, 800 feet north of station, 200 feet west of fruit drier, 100 feet west of track at road crossing, west side of county road; iron post stamped "2188 S"-----	2, 188. 840
Elberton, in front of station; top of rail-----	2, 189
Colfax, in front of station; top of rail-----	1, 965
Colfax, southwest corner of courthouse yard, 200 feet east of river, 2 feet east of stone steps, 5 feet north of sidewalk; iron post stamped "1965 S"-----	1, 965. 547
Diamond, 200 feet east of platform, 600 feet north of hotel, 50 feet south of track, edge of right of way; iron post stamped "2041 S"---	2, 041. 857

From Colfax southeast along track of Oregon-Washington R. R. & Navigation Co. to Pullman.

Riverside, 75 feet south of warehouse, 25 feet west of county bridge over South Palouse River, 200 feet east of ranch house, north side of road near railroad; iron post stamped "2164 S"-----	2, 165. 103
Bridge D-9; water surface June 17, 1903-----	2, 164
Guy, in front of station; top of rail-----	2, 246
Guy, 450 feet south of station, 10 feet west of track, 50 feet west of Balfour, Guthrie & Co.'s warehouse, 10 feet south of county road; iron post stamped "2250 S"-----	2, 250. 705
Pullman, 3 feet north of station platform, 15 feet west of track; iron post stamped "2341 S"-----	2, 342. 374
Pullman, Washington Agricultural College, west side of main entrance to administration building, in granite pillar 2.5 feet above ground; bronze tablet stamped "2536 S"-----	2, 536. 689

From Cottonwood schoolhouse southwest along highway to Diamond.

Troup ranch, 300 feet east of house, at forks of road, 5 feet south of mail box, west side of road; iron post stamped "2316 S"-----	2, 316. 574
Torrent ranch, 600 feet west of house, bridge over Palouse River (known as Torrent's bridge)-----	1, 773. 03
Water surface under bridge July 10, 1903-----	1, 757
Torrent ranch, 500 feet west of house, 20 feet north of county road, at east end of steel bridge over Palouse River, near large pine tree; iron post stamped "1769 S"-----	1, 769. 972

From Colfax southwest along highway to Wilcox, thence southeast to Pullman.

Smith ranch, 300 feet southwest of barn, 1,000 feet west of house, west side of road at road forks; iron post stamped "2187 S"-----	2, 187. 822
Wilcox, 150 feet west of post office and store, 100 feet south of blacksmith shop, at forks of road; iron post stamped "1812 S"-----	1, 812. 754
Dunn ranch, 250 feet west of house, at gate, in root of elm tree; nail-----	1, 858. 43
Dowling bridge over Union Flat Creek, 300 feet north of, 1,000 feet north of Dowling house at forks of road near mail box; iron post stamped "1996 S"-----	1, 997. 096
Regan ranch, 300 feet south of house, 5 feet south of small stream, on east side of road, in root of cottonwood tree; spike-----	2, 062. 05

	Feet.
Saints Home, 0.2 mile northeast of, 50 feet east of Hamilton bridge over Union Flat Creek, east side of road, in root of poplar tree; spike-----	2, 068. 00
T. 15 N., R. 44 E., sec. 31, at north quarter corner of, 2 miles west of Lewis Church; iron post stamped "2374 S"-----	2, 375. 422
Spring Flat, Lewis Church, in foundation at northwest corner of, just west of entrance; bronze tablet stamped "2409 S"-----	2, 409. 988
From Pullman southwest along highway to Wawawai, thence southeast via Steptoe Canyon to Uniontown (part of line).	
Fowler ranch, 0.2 mile east of house, south side of road, end of bridge over Union Creek; iron post stamped "2316 S"-----	2, 316. 726
Klingard signal, 0.2 mile east of Klingard house, triangulation station on hill in wheat field; iron post stamped "2708 S"-----	2, 708. 860
Wawawai, 1.5 miles east of, east side of road; top of large bowlder--	1, 456. 43
Wawawai, 0.2 mile west of post office, 100 feet north of ferryman's house, south of road at gatepost; iron post stamped "657 S"-----	657. 733
Wawawai, 2 miles southeast of, 0.2 mile east of Snake River, west side of road; top of bowlder-----	765. 64
O'Dell ranch, 200 feet northeast of house, 50 feet south of small stream, 2 feet inside of wire fence, in large bowlder; bronze tablet stamped "719 S"-----	719. 755
Bishop ranch, west of house, in root of poplar tree at front gate; spike-----	695. 787
Alex-Indian ranch, 200 feet south of house, 1,000 feet east of river, west side of road; top of bowlder-----	692. 24
Steptoe Canyon, 150 feet north of old corral, 20 feet east of creek, west side of road; top of large bowlder-----	1, 776. 54
Nesterbank ranch, 0.25 mile west of house, 50 feet west of road, 10 feet west of small creek, west side of Steptoe Canyon; in stone wall (natural), in field; bronze tablet stamped "2541 S"-----	2, 541. 974
Colton, corner of Main and Second streets, northwest corner of Fraternity Block, 4 feet north of entrance to bank, 2 feet above sidewalk; bronze tablet stamped "2563 S"-----	2, 564. 251
Uniontown, southeast corner of Montgomery and Spring streets, northwest corner of brick building occupied by First State Bank, 10 feet north of entrance, 2 feet above sidewalk; bronze tablet stamped "2574 S"-----	2, 574. 646
From Wawawai along highway by circuitous route via Offield Canyon, Kirby schoolhouse, and Alpowa to Steptoe Canyon (part of line).	
Snake River, at Wawawai; water surface August 22, 1903-----	629
Offield, at mouth of Offield Canyon, 600 feet north of house, 500 feet northeast of packing house, 0.25 mile west of Snake River, east side of road, near orchard fence; iron post stamped "671 S"-----	672. 054
Overherd ranch, 150 feet south of house, 10 feet east of creek, west side of road, in root of cottonwood tree; spike-----	887. 54
Richardson ranch, 250 feet west of house, 350 feet south of barn, near fence on east side of road, 5 feet south of locust tree; iron post stamped "2447 S"-----	2, 448. 167
Kirby schoolhouse, 500 feet south of, 200 feet north of small creek, 1,000 feet northwest of ranch house, 20 feet west of wagon road, in stone; bronze tablet stamped "2427 S"-----	2, 428. 401

ASOTIN QUADRANGLE.

[Latitude 46°-46° 30'; longitude 117°-117° 30'.]

From Pullman along highway southwest to Wawawai, thence southeast via Steptoe Canyon to Uniontown (part of line).

	Feet.
Quast ranch, 200 feet north of house, 0.2 mile east of Snake River, 100 feet east of county road, in large boulder; bronze tablet stamped "748 S"-----	749. 814

From Wawawai along highway by circuitous route via Offield Canyon, Kirby schoolhouse, and Alpowa to Steptoe Canyon (part of line).

Swenney ranch, 0.5 mile east of house, 20 feet northwest of road forks of Lewiston-Pomeroy stage road and road down Dead Man Gulch, inside fence corner; highest point of stone 10 by 8 by 6 inches.-----	2, 518. 99
Fannin ranch, 0.5 mile west of, at summit of divide between Alpowa and Pataha creeks, 50 feet south of forks of Pomeroy and Watertine roads, south side of road near mail box; iron post stamped "2610 S"-----	2, 611. 033
Alpowa post office, 15 feet north of, in yard of A. E. Lee's ranch, 3 feet west of front gate, 100 feet south of north fork of Alpowa Creek; iron post stamped "1322 S"-----	1, 323. 209
Alpowa Canyon, 50 feet south of old house of Walker ranch, 150 feet north of creek, north side of road, in root of large poplar tree; spike-----	1, 069. 99
Alpowa Ferry, 1,000 feet west of landing, west side of Snake River, 100 feet northeast of house, 200 feet west of warehouse, south side of road, at corner of fence; iron post stamped "720 S"-----	721. 090
Pate ranch, 1,000 feet north of house, 20 feet north of creek, in solid rock wall, at north side of road; bronze tablet stamped "1208 S"--	1, 209. 593

Connell, Othello, Pacific Lake, Pasco, Ritzville, and Rock Lake 30' quadrangles.

ADAMS, FRANKLIN, LINCOLN, AND SPOKANE COUNTIES.

The elevations in the following list were determined by primary leveling extended from the precise-level line of the Coast and Geodetic Survey at Pasco. The double-rodged line from Pasco to Spokane of this list was part of a line from Tacoma eastward along the Northern Pacific Ry. and was redetermined by the Coast and Geodetic Survey between Pasco and Green River.

The leveling was done in 1898 by H. S. Crowe, except a part of that in the Connell quadrangle, which was done in 1903 by R. B. Shaw, and part in Pasco quadrangle, done in 1913 by D. S. Birkett.

PASCO QUADRANGLE.

[Latitude 46°-46° 30'; longitude 119°-119° 30'.]

From Pasco north along Northern Pacific Ry. to Eltopia (double line).

Pasco, on end wall of stall No. 1 of new roundhouse; aluminum tablet stamped "378 T"-----	Feet. 378. 025
Pasco, in front of telegraph office; top of rail-----	381. 3
Milepost "Wallula 20, Hope 226," 50 feet south of, 18 feet west of center of main track, 5 miles east of Pasco; iron post stamped "445 T"-----	444. 955

	Feet.
Glade, opposite center of siding; top of rail of main line.....	493. 0
Milepost "Wallula 25, Hope 221," 90 feet southeast of, 3.5 feet west of telegraph pole; iron post stamped "537 T".....	537. 509
Eltopia, 35 feet east of gate to section house, 33 feet from center of main track, 50 feet from tank house, 1.4 feet from fence; iron post stamped "591 T".....	591. 089
Eltopia, in front of water tank; top of rail.....	591. 3
From Pasco northwest along highway up left (east) bank of Columbia River to Ringold.	
Pasco, in yard surrounding Hotel Pasco, on Court Street, 0.7 meter west of sidewalk in front of hotel, 10.35 meters east of east side of hotel, 57.5 meters south of main track; bottom of square hole in top of granite post, marked "U. S. B. M." (C. & G. S. b. m. A 3).....	378. 204
Pasco, 1.6 miles northwest of, on road up river, at intersection of road with telephone line, west side of road; spike in base of tele- phone pole, marked "U. S. 381 B. M.".....	381. 32
Pasco, 3 miles northwest of, at crossing of road up river and private road, in southwest corner; nail in base of telephone pole, marked "U. S. 370 B. M.".....	369. 76
Pasco, 4.1 miles northwest of, on south side of road up Columbia River; spike in base of telephone pole, marked "U. S. 366 B. M.".....	365. 63
T. 9 N., R. 29 E., northeast corner of sec. 27, south side of road, 2 feet from fence; iron post stamped "362 T" (Reclamation Serv- ice b. m.).....	362. 044
Pasco, 5 miles northwest of, on south side of road, 200 feet west of crossroad; spike in base of telephone pole, marked "U. S. 358 B. M.".....	357. 78
Pasco, 6 miles northwest of, at point where road meets river, 30 feet west of road; spike in base of telephone pole, marked "U. S. 347 B. M.".....	346. 63
Pasco, 7.1 miles northwest of, 15 feet west of road along river, in front of J. N. Linn farm; spike in base of telephone pole, marked "U. S. 376 B. M.".....	375. 94
Timberman Ferry, 0.3 mile from, about center of sec. 18, T. 9 N., R. 29 E., on east side of road, 1 foot from fence at fence corner at south corner of field; iron post stamped "387 T" (Reclamation Service b. m.).....	387. 016
Richland, across river and 0.5 mile south of, on Pasco road, at southwest fence corner; spike in base of telephone pole, marked "U. S. 370 B. M.".....	369. 48
Richland, across river and 1 mile northeast of, 30 feet west of river road, in base of second telephone pole south of J. E. Shorrett's pumping plant; spike marked "U. S. 354 B. M.".....	353. 98
Richland, 1.5 miles northeast of, at gate of Norling's ranch; spike in gate post, marked "U. S. 360 B. M.".....	360. 02
T. 9 N., R. 29 E., northwest corner of, on west side of road, 3 feet north of fence corner; iron post stamped "463 T" (Reclamation Service b. m.).....	462. 816
T. 10 N., R. 29 E., southwest corner of sec. 30, 3.7 miles up river from Richland; spike in base of cedar fence post, marked "U. S. 488 B. M.".....	487. 75

	Feet.
Richland, 4.6 miles up river from, northeast corner of sec. 25, T. 10 N., R. 28 E., west side of road, at fence corner where roads intersect at right angles; spike in base of post, marked "U. S. 493 B. M."-----	493.36
T. 10 N., R. 29 E., southwest corner of sec. 18; spike in base of corner fence post, marked "U. S. 496 B. M."-----	495.91
T. 10 N., R. 28 E., 0.5 mile west of northwest corner of sec. 13, on east side of road; spike in base of gate post, marked "U. S. 477 B. M."-----	477.13
Richland, 8 miles north of, on east side of river, 0.8 mile downstream from Byers Landing, on east side of road; spike in base of gate post, marked "U. S. 448 B. M."-----	447.57
Byers Landing, in sec. 2, T. 10 N., R. 28 E., lot 2, in concrete engine pier of pumping plant foundation; aluminum tablet stamped "359 Wash 1913"-----	359.273
Byers Landing, 1.2 miles north of, 25 feet west of road; spike in top of pile, marked "U. S. 358 B. M."-----	358.42
Byers Landing, 2 miles north of, southwest corner of fence, 8 feet east of road; spike in base of fence post, marked "U. S. 370 B. M."---	369.51
Byers Landing, 2.3 miles north of, in SW. $\frac{1}{4}$ sec. 24, T. 11 N., R. 28 E., at south end of Taylor's Flat, northwest corner of field belonging to J. L. Clearwater's ranch, 12 feet east of road; iron post stamped "375 Wash 1913"-----	374.712
Byers Landing, 3.1 miles north of, 0.7 mile north of Clearwater's ranch, 80 feet west of road; spike in top of pile, marked "U. S. 364 B. M."-----	363.63
Taylor's Flat, north end of, 1.2 miles north of Clearwater's ranch, 130 feet west of point where river road turns up hill leaving river; spike in base of pile, marked "U. S. 364 B. M."-----	363.89
Ringold Flat, south end of, in line of fence, 40 feet north of house on G. H. Colley's ranch, 60 feet west of road; iron post stamped "454 Wash 1913"-----	453.965
Ringold schoolhouse, 1.1 miles south of, 40 feet west of road, in corner of fence; spike in base of fence post, marked "U. S. 467 B. M."--	467.15

United States Engineers bench mark.

Hanford, 150 feet west of pumping plant; top of iron pipe-----	384.76
Pasco, Coast and Geodetic Survey bench mark X, (Engineers' elevation equals 351.98)-----	352.303

OTHELLO QUADRANGLE.

[Latitude 46° 30'–47°; longitude 119°–119° 30'.]

From Eltopia north along Northern Pacific Ry. to Mesa (double line).

Through cut, at south end of, 330 feet northeast of milepost "Waula 37, Hope 209," 5 feet north of telegraph post; iron post stamped "651"-----	651.435
Lake, in front of section house; top of rail-----	677.8
Lake (Mesa) in northwest corner of fence at section house, 40 feet east of center of track, 180 feet north of water tank; iron post stamped "677 T"-----	677.182

CONNELL QUADRANGLE.

[Latitude 46° 30'–47°; longitude 118° 30'–119°.]

From Mesa northeast along Northern Pacific Ry. to Lind (double line).

	Feet.
Mesa, 4.6 miles northeast of, 50 feet southeast of center of track, opposite milepost "Wallula 46, Hope 200," 4 feet southwest of telegraph pole; iron post stamped "715 T"-----	715. 409
Connell station, 16 feet from northeast corner, between platform and telegraph pole, 16 feet southeast of center of track; iron post stamped "838 T"-----	838. 284
Trestle 194, 100 feet south of west end of, 12 feet north of telegraph pole, 400 feet northeast of milepost "Wallula 55, Hope 191," 50 feet south of center of track; iron post stamped "924 T"-----	924. 320
Hatton, near corner of fence east of schoolhouse, near center line of sec. 20, T. 15 N., R. 31 E., 100 feet west of center of track; iron post stamped "1077 T"-----	1, 077. 513
Hatton, in front of telegraph office; top of rail-----	1, 064. 2
Scott station, 50 feet northeast from north corner, 2.5 feet north of telegraph pole near pump house, 50 feet east of center of main track; iron post stamped "1167 T"-----	1, 166. 579
Scott, in front of telegraph office; top of south rail-----	1, 166. 6
Milepost "Wallula 68, Hope 178," 47 feet southeast of, near east line of railroad fence at road crossing, 60 feet east of center line of crossing, 33 feet east of center of main track; iron post stamped "1394 T"-----	1, 393. 828
Providence, in front of section house; top of rail-----	1, 537. 7
Milepost "Wallula 73, Hope 173," 1,920 feet northeast of, 50 feet east of center of track, 10 feet north of telegraph pole at Farm crossing; iron post stamped "1476 T"-----	1, 476. 447
Lind station, 28 feet from northwest side of tank house, in northeast corner of fence around, and 50 feet east of corner of telegraph office, 21 feet northwest of center of track; iron post stamped "1362 T" ¹ -----	1, 362. 560

From Lind west along highway to Adams-Grant county line.

Lind, 3.1 miles west of, 15 feet southeast of Lind Coulee road, 120 feet southwest of bridge over Dry Creek; iron post stamped "1316 T"-----	1, 316. 097
Lind, 5.6 miles west of, 15 feet southeast of Lind Coulee road, 20 feet northwest of perpendicular bluff 25 feet high, in top of large boulder; tablet stamped "1297 T"-----	1, 297. 027
Lind, 9 miles west of, 20 feet northeast of Lind Coulee road, on top of hill just above schoolhouse, in rock 3 feet 6 inches long and 6 inches above ground; tablet stamped "1325 T"-----	1, 324. 520
Lind, 11.5 miles west of, 10 feet northeast of Lind Coulee road, 100 feet southwest of gap in fence, in rock among a number of loose boulders; tablet stamped "1247 T"-----	1, 247. 358
T. 17 N., R. 31 E., at center of east line of sec. 14, 10 feet west of Lind Coulee road, 1 foot east of Knottingham's east fence, in rock 3 feet long set 2.5 feet in ground; tablet stamped "1202 T"-----	1, 201. 876
Lind, 18.1 miles west of, 50 feet west of junction in forks of old Crab Creek or McManoman trails or roads; iron post stamped "1198 T"-----	1, 197. 930
T. 17 N., R. 31 E., 350 feet west of center line in NW. $\frac{1}{4}$ sec. 6, 0.25 mile north of county road; iron post stamped "1204 T"-----	1, 203. 897

¹ This bench mark was removed by track gang Apr. 10, 1906, and placed under a tank, elevation not known.

RITZVILLE QUADRANGLE.

[Latitude 47°-47° 30'; longitude 118°-118° 30'.]

From Faha northeast along Northern Pacific Ry. to Sprague (double line).

	Feet.
Milepost "Wallula 90, Hope 156," opposite; iron post stamped "1645 T"-----	1, 645. 383
Ritzville, 1.1 miles south of, 4 feet north of telegraph pole, 150 feet southeast of milepost "Wallula 95, Hope 151," 42 feet east of center of track; iron post stamped "1798 T"-----	1, 797. 947
Ritzville, at north entrance to Adams County courthouse, in fifth row of bricks above stone foundation; aluminum tablet stamped "1820 T"-----	1, 820. 511
Ritzville, 4 miles east of, 45 feet northwest of milepost "Wallula 100, Hope 146," 50 feet north of center of track, 0.4 foot west of telegraph pole; iron post stamped "1848 T"-----	1, 849. 003
Iona, 2 feet east of railroad fence at, 123 feet north of center of track, 145 feet from north front of warehouse, 300 feet northwest of milepost "Wallula 104, Hope 142"; iron post stamped "1944 T"-----	1, 944. 083
Harriston siding, at west end of; head of block of switch-----	1, 928. 3
Harriston, 6 miles east of Iona, 30 feet west of southwest corner of railroad section house, 50 feet north of center of track, 4 feet west of telegraph pole; iron post stamped "1937 T"-----	1, 937. 191
Harriston, in front of section house; top of rail-----	1, 937. 3
Sprague Lake; water surface-----	1, 890
Harriston, 5.6 miles east of, 40 feet north of center of track, 7 feet west of telegraph pole, 60 feet south of railroad fence, 100 feet west of cattle guard where cattle cross under trestle to Sprague Lake; iron post stamped "1897 T"-----	1, 897. 630
Sprague, northeast corner of First and C streets, in brick wall of Grey's store, ninth tier of bricks above sidewalk; aluminum tablet stamped "1899 T"-----	1, 899. 351
Sprague, in front of station; top of rail-----	1, 899. 2

ROCK LAKE QUADRANGLE.

[Latitude 47°-47° 30'; longitude 117° 30'-118°.]

From Sprague northeast along Northern Pacific Ry. to Cheney (double line).

Sprague, 1 mile east of, 50 feet north of center of track, 4 feet west of telegraph pole at road crossing; iron post stamped "1936 T"---	1, 937. 083
Kline, in front of section house; top of rail-----	2, 113. 1
Milepost "Wallula 127, Hope 119," 60 feet northeast of, 50 feet north of center of track, 6 feet southwest of telegraph pole, 50 feet west of east switch stand; iron post stamped "2147 T"-----	2, 148. 042
Tyler, 1.8 miles west of, 60 feet north of milepost "Wallula 132, Hope 114," 30 feet west of center of track; iron post stamped "2272 T"---	2, 272. 621
Tyler, in front of telegraph office; top of rail-----	2, 292. 1
Milepost "Wallula 137, Hope 109," 20 feet from, 28 feet from center of track, 4.8 feet east of telegraph pole; iron post stamped "2284 T"-----	2, 284. 864
Milepost "Wallula 142, Hope 104," 390 feet northeast of, 40 feet south of center of track; iron post stamped "2353 T"-----	2, 353. 717
Cheney, in front of station; top of rail-----	2, 336. 0
Cheney, in northeast corner of First National Bank building, corner of Main and D streets, in top of eighth row of bricks above sidewalk; aluminum tablet stamped "2351 T"-----	2, 352. 622

Feet.

Cheney, on right-hand side of portico entrance to Washington State Normal School, in eighth tier of brick above tile floor and 16 feet east of corner of wall; aluminum tablet stamped "2432 T"----- 2,432.825

PACIFIC LAKE QUADRANGLE.

[Latitude 47°-47° 30'; longitude 118° 30'-119°.]

From Lind north along Northern Pacific Ry. to Paha.

Milepost "Wallula 85, Hope 161," 0.25 mile west of, 100 feet north of railroad track, 50 feet north of railroad fence, 40 feet north of center of wagon road; iron post stamped "1507 T"----- 1,507.508
 Paha, in front of station; top of rail----- 1,563.9

Chewelah, Colville, Davenport, Marcus, Reardan, and Wilbur quadrangles.

FERRY, LINCOLN, SPOKANE, AND STEVENS COUNTIES.

The elevations in the following list were determined by primary leveling extended from the precise-level line of the Coast and Geodetic Survey along the Northern Pacific Ry.

The leveling was done as follows: Marcus quadrangle in 1901 by E. M. Fry and R. A. Farmer and in 1905 by J. G. Hefty; Colville quadrangle in 1901 by Farmer and in 1905 by Hefty; Chewelah quadrangle in 1901 by Farmer; Davenport and Wilbur quadrangles in 1903 by Philo Holbrook, jr.; and Reardan quadrangle in 1898 by H. S. Crowe, in 1901 by Farmer, and in 1903 by Holbrook. The leveling by Hefty was done under the United States and Canada Boundary Commission and that by Holbrook under the United States Reclamation Service.

COLVILLE QUADRANGLE.

[Latitude 48° 30'-49°; longitude 117° 30'-118°.]

From Arden spur northwest along Spokane Falls & Northern (Great Northern) Ry. to Meyers Falls.

Feet.

Colville, 120 feet west of station; iron post stamped "1582 S"----- 1,579.371

From Ryan northeast along Spokane Falls & Northern (Great Northern) Ry. to Boundary (double line).

Ryan post office and store, in front of, at road crossing; top of rail-- 1,360.2
 Milepost 117, 0.3 mile south of, 150 feet south of square water tank;
 top of rail----- 1,349
 Milepost 119, 17 feet north of, 22 feet west of center of track; iron
 post stamped "1427 T"----- 1,425.132
 Marble post office, in front of, at road crossing; top of rail----- 1,463.7
 Milepost 122, 6 feet north of second telegraph pole north of, 27 feet
 west of track, at section line between secs. 16 and 17, wagon road
 on top of bluff 200 feet higher; iron post stamped "1442 T"----- 1,439.466

	Feet.
Milepost 124, across track from, about 20 feet south of, in rock cut in limestone at south end of cut above Little Dalles; aluminum tablet stamped "1356 T"-----	1, 354. 229
Milepost 127, 20 feet northwest of, 10 feet from track; point of granite boulder-----	1, 323. 04
Milepost 127, 20 feet north of, 10 feet northwest of track, in granite boulder; aluminum tablet stamped "1325 T"-----	1, 323. 012
Red Mountain Junction, at north switch; top of rail-----	1, 320. 6
Northport, in south end of, in southwest corner of block 7, on street next to railroad; iron post stamped "1335 T"-----	1, 332. 945
Milepost 130, 10 feet west of track, at beginning of rock cut just north of smelter; point on rock-----	1, 351. 12
Trestle 78, center of, across large creek; top of rail-----	1, 337. 5
Milepost 132, 0.25 mile south of, 30 feet west of track, 6 feet from telegraph pole, near river bank, north end of tangent on Sand Flat; iron post stamped "1329 T"-----	1, 326. 819
Milepost 136, 6 feet from; iron post stamped "1338 T"-----	1, 336. 632
Boundary, Wash., on international boundary line, on gravel flat, near azimuth mark; iron post stamped "1356"-----	1, 354. 138
Boundary; top of azimuth post-----	1, 356. 168
Boundary, at boundary line crossing; top of rail-----	1, 352. 6

MARCUS QUADRANGLE.

[Latitude 48° 30'-49°; longitude 118°-118° 30'.]

From Meyers Falls north along Spokane Falls & Northern (Great Northern) Ry.
to Ryan (double line).

Meyers Falls, 120 feet north of station; iron post stamped "1632 S"-----	1, 630. 214
Meyers Falls, in front of station; top of rail-----	1, 631
Meyers Falls, 0.9 mile north of, at road crossing, west side of track, in foot of crossing signpost; spike-----	1, 571. 98
Trestle 73, west guard rail of; bolt head-----	1, 457. 53
Meyers Falls, 2.5 miles north of, under a rocky point filled with prospect holes and in little basin, wagon road at foot of grade below track, 56 feet east of track; iron post stamped "1423 T"-----	1, 421. 140
Meyers Falls, 3.2 miles north of, at north end, west side, in guard rail of trestle 75; bolt head-----	1, 355
Marcus, 200 feet south of station, east side of track, in root of pine; spike-----	1, 260. 23
Marcus, 1 mile north of, opposite milepost 102, 50 feet east of track, in root of pine tree; spike-----	1, 292. 12
Marcus, 2 miles north of, 100 feet north of milepost 103, on bank next river; top of quartz boulder-----	1, 271. 28
Marcus, 3 miles north of, at north end of Seven Devils, wagon road 50 feet east of railroad track, at cabin, in root of pine tree; nail-----	1, 262. 71
Marcus, 3 miles north of, east of track, at west edge of wagon road, opposite a small cabin, in limestone boulder; aluminum tablet stamped "1275 T"-----	1, 273. 263
Marcus, 5.8 miles north of, at county road crossing, north of wagon road, 40 feet west of track; iron post stamped "1349 T"-----	1, 346. 731
Marcus, 8.5 miles north of, 40 feet north of track, opposite milepost 100, graveyard on opposite side of track, in root of pine tree; spike-----	1, 383. 39

	Feet.
Bossburg, 180 feet west of south end of station, at corner of lot; iron post stamped "1358 T"-----	1, 356. 166
Bossburg, 2 miles north of, 7 feet east of track, 200 feet north of milepost 112; point on granite boulder-----	1, 293. 89
Bossburg, 3 miles north of, 50 feet north of track, at milepost 113, just north of limerock knoll behind which wagon road runs; iron post stamped "1278 T"-----	1, 275. 766
Ryan post office, 0.5 mile south of, 10 feet east of milepost 116, 30 feet east of track; iron post stamped "1376"-----	1, 373. 779

From Meyers Falls west along stage road to Kaylor post office.

Kettle Falls, southwest corner of Franklin and Jefferson streets, 125 feet west of public-school house, in root of 10-inch pine tree; nail-----	1, 307. 17
Kettle Falls, Columbia River; surface of water Mar. 20, 1901-----	1, 169
Weston ranch, 0.2 mile east of, 300 feet west of milepost 26, 6 feet south of road; iron post stamped "2537"-----	2, 535. 068
Sherman Hotel, 0.5 mile west of, 5 feet north of road at top of grade; iron post stamped "3709"-----	3, 707. 246
Chillikoot Summit, 10 feet north of road summit; iron post stamped "5592"-----	5, 595. 642

CHEWELAH QUADRANGLE.

[Latitude 48°-48° 30'; longitude 117° 30'-118°.]

From Clayton northwest along Spokane Falls & Northern (Great Northern) Ry. to Ardon spur.

Loon Lake, 50 feet west of northwest corner of station; iron post stamped "2416 S"-----	2, 417. 541
Springdale, at west end of station platform; iron post stamped "2086 S"-----	2, 086. 885
Valley, 60 feet west of mail catch; iron post stamped "1670 S"-----	1, 670. 786
Chewelah, 300 feet north of station, 150 feet south of milepost 65; iron post stamped "1668 S"-----	1, 669. 266
Blue Creek, at northeast corner of post office; iron post stamped "1639 S"-----	1, 636. 871
Addy, at road crossing, 150 feet south of milepost 74; iron post stamped "1635 S"-----	1, 632. 724
Ardon spur, north of Ayer's barn, 15 feet east of track; iron post stamped "1605 S"-----	1, 602. 494

REARDAN QUADRANGLE.

[Latitude 47° 30'-48°; longitude 117° 30'-118°.]

From Deer Park northwest along Spokane Falls & Northern (Great Northern) Ry. to Clayton.

Clayton, in wall of engine room of Washington Brick, Lime & Manufacturing Co.'s mills; bronze tablet stamped "2265 S"-----	2, 265. 935
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From Spokane west down Spokane River to Canyon schoolhouse.

Spokane, 0.7 mile west of, upper side of track, stump marked "1654.16" (Great Northern Ry. bench mark)-----	1, 900. 175
T. 26 N., R. 42 E., southeast corner of sec. 20, northwest of Spokane; iron post stamped "1677 T"-----	1, 678. 758

	Feet.
Abbot schoolhouse, 75 feet north of Charles road; iron post stamped "1738 T"-----	1, 738. 766
T. 27 N., R. 40 E., southeast corner of sec. 20; iron post stamped "1758 T"-----	1, 759. 085
T. 27 N., R. 39 E., center of sec. 20, at Lazebrook's place, 150 feet from river bank; iron post stamped "1704 T"-----	1, 705. 188

From Mondovi east along Northern Pacific and Great Northern railways to Spokane.

Mondovi station; iron post stamped "2507 T"-----	2, 508. 165
Reardan; iron post stamped "2497 T"-----	2, 498. 249
Deep Creek station; iron post stamped "2308 T"-----	2, 309. 120
Lyons, 0.5 mile south of, at crossing of wagon road, 20 feet from road, 25 feet from track; iron post stamped "2322 T"-----	2, 323. 198

From Cheney north along Northern Pacific Ry. to Spokane (double line).

At junction of Y of Washington Central branch and Northern Pacific Ry-----	2, 322. 9
Cheney, 4.5 miles east of, 35 feet west of center of track, 5 feet north of telegraph pole, 60 feet southwest of road crossing; iron post stamped "2195 T"-----	2, 196. 420

DAVENPORT QUADRANGLE.

[Latitude 47° 30'–48°; longitude 118°–118° 30'.]

From Canyon schoolhouse west down Spokane and Columbia rivers to Creston.

Canyon schoolhouse, 100 feet from, beside road; iron post stamped "1285 T"-----	1, 285. 611
Halfway House on country road, 400 feet north of barn, near road to Davenport 15 miles distant; iron post stamped "1553 T"-----	1, 554. 145
T. 28 N., R. 37 E., quarter corner east side of sec. 19, at schoolhouse on road between Fort Spokane and Davenport; iron post stamped "1239 T"-----	1, 239. 731
Fort Spokane, 0.5 mile south of, on bench alongside of road running east and west in sec. 29, T. 28 N., R. 36 E.; iron post stamped "1672 T"-----	1, 673. 320
Peach post office, 3.5 miles west of, at foot of road to Creston and down Columbia, on Warren place; iron post stamped "1540 T"-----	1, 541. 135

From Creston east along Northern Pacific Ry. to Mondovi.

Fellows station; iron post stamped "2329 T"-----	2, 330. 101
Rocklyn station; iron post stamped "2385 T"-----	2, 386. 341
Davenport; iron post stamped "2408 T"-----	2, 409. 019

WILBUR QUADRANGLE.

[Latitude 47° 30'–48°; longitude 118° 30'–119°.]

From point near Creston west along Northern Pacific Ry. to Coulee City.

Creston, 0.5 mile east of, at crossroads; iron post stamped "2444 T"-----	2, 445. 318
Wilbur station; iron post stamped "2165 T"-----	2, 166. 252
Govan station, at milepost 81; iron post stamped "2069 T"-----	2, 070. 237
Almira station; iron post stamped "1916 T"-----	1, 917. 391

Chopaka, Keller, Okanogan, Osoyoos, and Republic quadrangles.

DOUGLAS, FERRY, AND OKANOGAN COUNTIES.

The elevations in the following list were determined by primary leveling forming part of a level net extending from the Pacific coast.

The leveling was done as follows: Republic and Osoyoos quadrangles in 1901 and 1902 by E. M. Fry and in 1903 by F. E. Fellows; Chopaka quadrangle in 1902 by Fry and in 1903 by Fellows; Nespelem quadrangle in 1901 by Fry; and Okanogan quadrangle in 1899, 1901, and 1902 by Fry, in 1903 by Fellows and W. R. Hill, and in 1904 by G. H. Kendall.

OKANOGAN QUADRANGLE.

[Latitude 48°-48° 30'; longitude 119° 30'-120°.]

From Twisp east along highway 16 miles, thence north to Snolden ranch.¹

	Feet.
Burke ranch, 1,000 feet east of house, 5 feet north of road, in root of pine tree; nail marked "2403"-----	2, 403. 70
Ramm ranch, 1,500 feet west of house, 5 feet north of road at junction of Twisp-Conconully road and road to Ramm ranch, 1,000 feet north of Frazier Creek, 1 foot out of ground; iron post stamped "2495 T"-----	2, 494. 895
Hancock ranch, 2 miles east of, 400 feet north of Frazier Creek, on south side of road, in root of pine tree; nail marked "3201"-----	3, 201. 19
Summit, 0.5 mile west of, at north side of road, in root of tree; nail marked "3703"-----	3, 703. 01
Summit of divide between Frazier and Loop Loop creeks, 5 feet south of Conconully-Methow Valley road; 1 foot out of ground; iron post stamped "4020 T"-----	4, 020. 044
Summit, 1.5 miles east of, north side of road, in top of sawed stump; brass cartridge shell marked "3709"-----	3, 709. 41
Milepost 4 (on Loop Loop-Methow road), 300 feet east of, south side of road, in root of fir tree; nail marked "3296"-----	3, 295. 95
Old Cabin camp ground, 100 feet east of creek crossing, 300 feet south of old log cabin, 25 feet south of road, in notch in pine tree; nail marked "3244"-----	3, 244. 68
Milepost 1, 500 feet east of, 1 mile west of Loop Loop bridge, north side of road, in root of fir tree; nail marked "2847"-----	2, 847. 48
Loop Loop Creek, junction of Conconully-Methow and Loop Loop-Okanogan roads, on south side of road, in root of tree; nail marked "2431"-----	2, 431. 74
Loop Loop Creek, junction of Conconully-Methow and Okanogan-Loop Loop roads, 5 feet west of roads and 50 feet east of creek; iron post stamped "2433"-----	2, 433. 052
Johnson ranch, 300 feet southeast of house, 250 feet east of bridge, south side of road, in root of tree; nail marked "2576"-----	2, 575. 87
Summit of divide between Loop Loop and Ruby creeks, 200 feet south of, 10 feet east of road, in large bowlder; bronze tablet stamped "3081 T"-----	3, 081. 227

¹ This line closed 2.96 feet high and is unadjusted.

From Alta Lake along road north and west to Vroman ranch.

	Feet.
Alta Lake, 300 feet south of, 100 feet west of road, 1,000 feet west of McCutchin's ranch house; iron post stamped "1201 T"-----	1, 201. 376
Methow River, 1 mile from, 50 feet west of road, on summit of hill south of Methow Valley, in root of 20-inch pine tree; nail-----	1, 220. 36
Methow River, 0.5 mile from, at intersection of road up Methow River to Ives Landing; on top of stone-----	1, 028. 08
Vroman ranch, in front of, 200 feet southeast of house, 200 feet east of shop, 100 feet north of State road; iron post stamped "1042 T"-----	1, 036. 64

From Pateros southwest along wagon road to Alta Lake (spur line; elevations unreliable).

Pateros, 100 feet southwest of post office, 60 feet north of hotel; iron post stamped "780"-----	780. 120
Pateros Hotel, 0.3 mile southwest of, 35 feet south of Methow River, 4 feet north of road; top of pointed red rock marked "771"-----	771. 756
Pateros Hotel, 1 mile southwest of, 0.3 mile west of cabins on Methow River, 600 feet southwest of gully, foot of bank of first bench; small blue rock marked "1101"-----	1, 101. 53
Alta Lake, 700 feet northwest of, 0.3 mile southeast of house, 20 feet east of road, in green salt grass meadow; iron post stamped "1188"-----	1, 188. 055
Alta Lake, northeast end of; surface of water on Sept. 25, 1903-----	1, 175. 7

From point near Vroman ranch northeast along wagon road to Riverside.

Pateros, 0.25 mile northwest of mouth of Methow River, 100 feet southeast of post office, 100 feet north of hotel, north side of street; iron post stamped "780"-----	780. 120
Columbia River; surface of water Aug. 17, 1901-----	742. 7
Brewster, 1.5 miles south of, north side of road near natural rock cut; top of large stone marked "817"-----	816. 97
Brewster, southeast corner of Second and Bruce avenues, southwest corner of Brewster Hotel, in stone foundation; bronze tablet stamped "812"-----	812. 430
Davis ranch, on Okanogan River, 300 feet south of house, in large granite stone at northeast corner of stone wall to basement of barn; bronze tablet stamped "912"-----	906. 457
Chiliwest Creek, road crossing at, west side of road, in root of balm tree; nail marked "861"-----	854. 95
Malott post office and road house, 5 feet north of northeast corner of house, 50 feet west of stage road; iron post stamped "845"-----	839. 015
Reilly ranch, center of lane, 500 feet north of house and 200 feet west of barn, in place; top of stone marked "830"-----	823. 61
Reilly ranch, 1 mile north of, 10 feet east of road; top of bowlder marked "837"-----	831. 00
Alma, 300 feet south of store and post office, 50 feet east of road, 0.25 mile south of Salmon River, at corner of fence; iron post stamped "895"-----	887. 740
Richardson ranch, 20 feet north of barn, 75 feet south of irrigation ditch, side of road; on top of large stone marked "1272"-----	1, 264. 25
Pogue ranch, 1 mile north of, west side of road; on top of large stone marked "1303"-----	1, 295. 88
Pogue ranch, 2.5 miles north of, at forks of road; top of stone marked "1323"-----	1, 315. 02

	Feet.
Riverside, 2 miles south of, 500 feet east of road, 0.25 mile south of Roger's cabin in Pogue Flat, at quarter section corner; iron post stamped "1831"-----	1, 322. 995
From Thompson ranch on Okanogan River east and south by circuitous route to Bridgeport ferry, thence northwest along highway to Central ferry.	
Indian cabins, 0.8 mile north of, 400 feet east of river, 50 feet east of road, 200 feet west of granite cliff; top of granite rock marked "806"-----	806. 73
Okanogan River, 1.25 miles east of, 200 feet east of gully, 50 feet east of road, near granite outcrop; top of granite boulder marked "1235"-----	1, 235. 09
Okanogan River, 2.5 miles east of, 600 feet west of meadow and spring, in small gap, 5 feet south of trail; granite boulder marked "1771"-----	1, 770. 94
East end of long meadow, at cabin, 120 feet west of; top of round granite boulder marked "2008"-----	2, 008. 31
Deffland ferry, 4.5 miles east of, 0.25 mile east of cabin at east end of meadow, 200 feet east of tall lava rock with three pyramids on top, in large granite boulder; bronze tablet stamped "2137"-----	2, 138. 529
Cabin in meadow, 1.25 miles east of, 0.5 mile west of summit at head of ravine, in ravine at turn; black basalt boulder marked "2287"-----	2, 287. 46
Two Lakes, 1.5 miles south of, 600 feet southeast of spring, in granite boulder on small knoll; aluminum tablet stamped "2524"-----	2, 524. 109
Upper north end of long flat meadow between low ridges, 15 feet south of rock; on large basalt boulder with bushes on top, marked "2513"-----	2, 512. 85
Colville Reservation summit, 0.25 mile south of large rock with two pyramids, 0.25 mile west of large rock with bushes on top, near head of ravine, in granite rock; aluminum tablet stamped "2504"-----	2, 503. 640
Columbia River, 2.5 miles west of, in amphitheater, 1,000 feet west of black rock slide, 600 feet north of head of gully breaking into Columbia Valley; top of granite marked "2249"-----	2, 249. 03
Columbia River, 2 miles west of, 1 mile south of pines on slope, 600 feet north of spring gully; on large low lava rock marked "1872"-----	1, 872. 46
Bridgeport, 6 miles northeast of, 0.25 mile northwest of road, 1,000 feet south of spring, on rocky point, in basalt rock; aluminum tablet stamped "1249"-----	1, 248. 612
Indian cabin, 1 mile northeast of, 1,000 feet west of road and mouth of coulee, 30 feet south of gully; on top of basalt boulder on small bench marked "1088"-----	1, 089. 072
Bridgeport ferry, 2.5 miles northeast of, 1,000 feet east of Indian tepee and spring, 40 feet east of road, 20 feet west of granite outcrop; iron post stamped "969"-----	969. 122
Bridgeport ferry, 1 mile east of, 70 feet north of road, point of ridge; on granite boulder marked "933"-----	932. 52
Bridgeport ferry, 500 feet east of north tower, at junction of road; iron post stamped "843"-----	842. 739
Bridgeport, 0.8 mile west of, 2,000 feet southeast of south ferry tower, at road junction; iron post stamped "817 T"-----	816. 666
Bridgeport, 2.25 miles northwest of, 100 feet south of road, foot of small rocky point; on granite rock marked "932"-----	931. 67
Bridgeport, 3.5 miles west of, top of hill east of Koepp ranch, at road center; iron post stamped "934-5"-----	934. 086

	Feet.
Koepp ranch, 0.3 mile southeast of, at foot of hill, 15 feet south of road; on granite rock marked "825"-----	824. 633
Brewster ferry, 4.0 miles east of, 1,500 feet northeast of Cobb ranch house, road branch north into Cobb ranch; iron post stamped "794"-----	798. 561
Brewster ferry, 1.25 miles east of, 4 feet north of road, in grassy hollow; on top of white granite marked "769"-----	767. 99
Brewster ferry, 0.25 mile east of, 800 feet east of road junction, 8 feet east of road; on white granite marked "821"-----	818. 98
Central ferry, south tower, 1,000 feet southeast of, 200 feet east of gully, at road junction to ferry, 100 feet northeast of; iron post stamped "818 T"-----	816. 843
From Central ferry (west of Brewster) south along wagon road 3 miles (spur line; elevations unreliable).	
Central ferry, 0.7 mile south of, southeast corner of barn at; on small stone marked "1102"-----	1, 101. 37
Columbia River, 1.5 miles south of, 800 feet south of schoolhouse, 4 feet west of road; white rock marked "+1305"-----	1, 304. 06
Central ferry, 2.5 miles south of, 1.0 mile south of schoolhouse, 1,000 feet north of small house, 60 feet west of spring branch, east side of road; iron post stamped "1736"-----	1, 735. 331
From Malott west along highway to Oglesby ranch, near Red Shirt.	
Malott, 1.5 miles southwest of, 6 feet south of road; old bench mark on flat rock in place opposite cliff, marked "820"-----	813. 69
Stage road on Okanogan, 1 mile northwest of, 50 feet north of road, on first bench north of horseshoe bend in road; on granite boulder marked "1312"-----	1, 311. 68
Stage road at Chilliwist Creek, 2.3 miles northwest of, 0.25 mile northeast of White ranch, 6 feet east of road; flat rock marked "1511"-----	1, 510. 83
Schoolhouse, 0.8 mile southeast of, 1,700 feet northwest of Indian cabin, 16 feet west of road, in root of fir tree; nail marked "1693"-----	1, 693. 40
Schoolhouse, 150 feet northeast of, 20 feet northwest of road, in root of large pine tree; nail marked "1960"-----	1, 959. 61
Schoolhouse, 2,900 feet northeast of, 0.7 mile east of Mason ranch, 15 feet southeast of crossroads, in root of pine tree; nail marked "2034"-----	2, 033. 59
Schoolhouse, 0.8 mile northeast of, 0.25 mile east of Mason ranch, 130 feet northeast of fence corner, 30 feet east of road, in cleft rock; bronze tablet stamped "2036"-----	2, 036. 445
Deneen ranch, west side bars, 550 feet northwest of, 50 feet west of road, in group of rock; on rock in place marked "2398"-----	2, 398. 06
Deneen ranch, 1 mile northwest of, 0.25 mile southwest of Wenner cabin, 20 feet east of road, on big flat, in root of pine tree; nail marked "2620"-----	2, 620. 32
Wenner cabin, 0.5 mile west of, at foot of steep hill to summit, 500 feet south of road, in granite rock among group of boulders; aluminum tablet stamped "2720"-----	2, 718. 784
Summit of Chilliwist road, 0.8 mile north of, 12 feet north of road, bench foot of steep rise, in root of pine tree; nail marked "3007"-----	3, 006. 442
Summit of Chilliwist-Silver road, 20 feet south of road, in granite boulder; aluminum tablet stamped "3810"-----	3, 810. 054

	Feet.
Summit, 1 mile west of, 600 feet north of turn in road at foot of steep rise, 10 feet east of road; top of rock marked "3595"-----	3, 594. 43
Summit, 2 miles northwest of, 0.25 mile south of grassy meadow, 30 feet east of road, on small ridge, in root of pine tree; nail marked "3536"-----	3, 535. 37
Silver stage road junction, 3.8 miles east of, 6 feet south of road, east side of flat, in root of pine tree; nail marked "3378"-----	3, 377. 27
Silver stage road junction, 2.5 miles east of, 0.25 mile west of road through balm trees, 50 feet north of road, in root of pine tree; nail marked "3359"-----	3, 359. 26
Silver stage road junction, 1.5 miles east of, 0.25 mile northwest of road through saddle, 50 feet north of road, group of moraine boulders, in granite rock; aluminum tablet stamped "3174"-----	3, 174. 966
Junction of Silver-Brewster stage road and Chiliwist Creek road, 5.5 miles east of Silver, in root of fir tree; nail marked "2582"-----	2, 581. 62
Lyde ranch, 1.3 miles east of, north side of road, at granite outcrop; on top of boulder marked "2278"-----	2, 277. 21
Lyde ranch house, 0.25 mile east of, 6 feet north of road, corner of wire fence, in root of pine tree; nail marked "2025"-----	2. 024. 53

From Ruby southeast along highway to Alma.

Ruby, 1.5 miles south of, 0.5 mile north of Broughton ranch, 6 feet west of road; top of large boulder marked "1735"-----	1,731. 98
Broughton ranch, 0.5 mile south of, 1,000 feet south of bridge, 4 feet west of road, in root of pine tree; nail marked "1706"-----	1, 702. 72
Jones ranch, 3,400 feet south of, 8 feet west of road, in root of large pine tree; nail marked "1521"-----	1, 518. 26
Clover schoolhouse, 400 feet northeast of, 600 feet south of road junction, 1,000 feet north of bridge over Salmon Creek, 100 feet east of road, in top of large rock; bronze tablet stamped "1425"-----	1, 421. 787
Clover schoolhouse, 3,000 feet southeast of, 2,816 feet northwest of Osterberg ranch, 4 feet north of road; top of rock marked "1479"-----	1, 475. 59
Alma, 3 miles northeast of, 460 feet southeast of road junction, 100 feet northwest of falls in irrigation ditch, 20 feet west of road; on flat rock marked "1361"-----	1, 357. 70
Alma, 150 feet southwest of store and post office, at fence corner; iron post stamped "895"-----	887. 740

From Riverside southeast along road up Johnson Creek to Water ranch.¹

T. 35 N., R. 26 E., sec. 32, 600 feet west of Water ranch house, 300 feet north of Johnson Creek, 10 feet south of road, in large boulder; bronze tablet stamped "1332 T"-----	1, 331. 278
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CHOPAKA QUADRANGLE.

[Latitude 48° 30'–49° ; longitude 119° 30'–120°.]

From Snolden ranch along highway northeast to Boone ranch, thence northwest to Conconully, thence southwest to Snolden ranch.

Ruby City schoolhouse, 1,000 feet northeast of, 500 feet east of bridge over creek, 10 feet west of road, in root of pine tree; nail marked "1880"-----	1, 876. 831
Conconully, 3 miles southeast of, at northeast corner of Boone ranch, 25 feet west of road forks at Conconully-Riverside and Conconully-Brewster stage roads, in corner of fence; iron post stamped "2036"-----	2, 033. 32

¹ Line run twice.

	Feet.
Conconully, 0.8 mile east of, top of steep grade on Brewster road, north side of road, in root of fir tree; nail marked "2382"-----	2, 379. 28
Conconully, 600 feet north of schoolhouse at forks of Brewster stage road and Loop Loop road, in cottonwood tree; nail marked "2294"-----	2, 291. 26
Conconully, 2 miles south of, 50 feet west of West Fork of Salmon Creek, 4 feet south of road; top of bowlder marked "2348"-----	2, 345. 86
Milepost 3, 25 feet east of, 3 feet south of road, in root of fir tree; nail marked "2728"-----	2, 724. 94
Old log cabin, 100 feet south of, 50 feet east of road, in root of fir tree; nail marked "3108"-----	3, 100. 654
Milepost 6, 200 feet east of; top of bowlder in road, marked "3236"-----	3, 233. 44

From Conconully along highway north to Fish Lake, thence east to Wagonroad Coulee, thence south to Riverside.

Conconully, Okanogan County courthouse, 10 feet north of front gallery, 6 feet west of steps; iron post stamped "2361"-----	2, 358. 843
Conconully, 1.5 miles east of, 500 feet north of lake, 20 feet north of road, in root of pine tree; nail marked "2329"-----	2, 325. 79
Summit, 0.25 mile south of, east side of road, in tree; nail marked "2340"-----	2, 337. 51
Old sawmill site, 0.25 mile south of, 25 feet west of road, in root of fir tree; nail marked "2232"-----	2, 229. 40
Speckman ranch, 50 feet south of house, 50 feet north of barn, east side of road, in root of tamarack tree; nail marked "1827"-----	1, 824. 26
Speckman ranch, 400 feet north of house, at junction of road up Fish Lake and Loomis-Conconully stage road, 0.5 mile north of Fish Lake, east side of road; iron post stamped "1822"-----	1, 813. 417
Sehalon ranch, 400 feet north of house, 0.25 mile east of Fish Lake, 50 feet south of road, in root of pine tree; nail marked "1811"-----	1, 808. 87
Noyes ranch, 400 feet north of house, 20 feet north of road, at summit of divide at head of Pine Creek, in root of cottonwood tree; nail marked "2182"-----	2, 179. 86
Mud Lake; surface of water Nov. 20, 1902-----	2, 116. 5
Reed's store, 50 feet south of, 125 feet north of road, 0.25 mile east of junction of roads up north fork and south or main fork of Pine Creek; iron post stamped "2119"-----	2, 116. 895
Fate ranch, 150 feet south of east gate to, at northwest corner of log schoolhouse; top of corner stone marked "2024"-----	2, 021. 85
Wagonroad Coulee, 4 miles north of Riverside, Wash., 75 feet east of road, 0.5 mile east of small lake; iron post stamped "1230"-----	1, 222. 008
Riverside, on west bank of Okanogan River, 5 feet north of road to ferry; iron post stamped "865"-----	857. 257

From Fish Lake along highway north to Loomis, thence east to Oroville.

Cockron ranch, 30 feet west of barn, 300 feet east of house, 60 feet east of gate, 700 feet north of north end of Blue Lake, east side of road; iron post stamped "1683"-----	1, 683. 538
Hall ranch, 600 feet south of house, 50 feet east of road, in root of pine tree; nail marked "1500"-----	1, 497. 33
Chilson ranch, 1 mile south of, 10 feet east of road, 200 feet east of creek, on large bowlder; chisel mark marked "1411"-----	1, 407. 58
Hall ranch, 600 feet south of house, 50 feet east of road, 10 feet south of bearing tree to sec. 26, T. 88 N., R. 25 E.; iron post stamped "1501"-----	1, 498. 474

	Feet.
Chilson ranch, 300 feet south of gate, east side of road; top of stone marked "1332"	1, 328. 39
Loomis, northeast corner of post office, on south side of main street, 15 feet west of front door of Loomiston Trading Co.'s store, at edge of sidewalk; iron post stamped "1310"	1, 306. 478
Riley ranch, at northeast corner of, 20 feet south of Oroville road, 10 feet west of sheep chute road, in post; nail marked "1419"	1, 415. 83
Spectacle Lake, at west end of; surface of water, Oct. 27, 1902	1, 347. 8
Bright Spot mining camp, 1,000 feet south of bunk house and tunnel, 50 feet southeast of road, at top of steep grade; iron post stamped "1916 T"	1, 909. 470
Golden, 2 miles south of, 0.25 mile west of lake, 10 feet west of road; top of stone	1, 931. 96
Wannacut Lake; surface of water November 14, 1901	1, 845. 5
Golden, 10 feet south of porch to old store, 300 feet north of Spokane mill, 10 feet north of road; iron post stamped "1891 T"	1, 884. 310
From Riley ranch (east of Loomis) along highway southeast to point near Tonasket.	
Barberry ranch, 1 mile south of, 50 feet east of road; on top of large boulder	1, 685. 75
King ranch, 0.5 mile north of, 150 feet east of road; top of large boulder	1, 603. 13
Loyd Beall ranch, 300 feet north of house, 25 feet northeast of corral, 15 feet east of road; iron post stamped "1459"	1, 455. 565
From Loyd Beall ranch southwest to Aeneas Creek and Lake (single-spur line; elevations unreliable).	
Aeneas Creek, crossing of county road (Tonasket-Conconully road), 100 feet south of creek ford, 50 feet southeast of road, on side of hill; top of boulder marked "1389"	1, 385. 71
Aeneas Lake; surface of water December 2, 1902	1, 358. 0
From Loomis along highway northwest up Similkameen River to Canadian boundary (spur line; elevations unreliable).	
Loomis, 2 miles north of, 50 feet east of road, on high point, in root of lone pine tree; nail marked "1277"	1, 274. 381
Alderman ranch, 1,000 feet north of house, 10 feet east of road; top of large boulder marked "1192"	1, 188. 87
Palmer Lake; surface of water at south end October 30, 1902	1, 147
Pitman ranch, 1,000 feet west of house, 12 feet north of gate, 300 feet east of Palmer Lake, on east side of road; iron post stamped "1177"	1, 173. 673
Pershall ranch, 500 feet west of house, 100 feet west of road, 150 feet east of Palmer Lake, in root of pine tree; nail marked "1162"	1, 159. 43
Thein ranch, 150 feet north of house, 5 feet north of road, 100 feet from lake; top of boulder in place marked "1190"	1, 186. 617
Edwards ranch, 0.25 mile south of house, at junction of road up Similkameen River and road down river to Nighthawk post office; iron post stamped "1166 T"	1, 163. 121
Golden Zone stamp mill, 800 feet southeast of, 200 feet west of road; point on large boulder marked "1200"	1, 196. 65
International Boundary Line, 0.25 mile south of, 300 feet northeast of Indian cabin, 3 feet east of road, 0.25 mile west of Similkameen River; iron post stamped "1197"	1, 194. 316

From Palmer Lake north along highway down Similkameen River to Canadian boundary.

	Feet.
Clark ranch, 0.25 mile west of, 3 feet south of road, 10 feet east of telephone pole; top of bowlder-----	1,412.19
Blue Lake, 150 feet south of, 10 feet north of road; top of stone-----	1,794.85
Blue Lake, surface of water November 13, 1901-----	1,764.7
Blue Lake, 0.25 mile south of, 4 feet east of road; top of bowlder----	1,852.47

OSOYOOS QUADRANGLE.

[Latitude 48° 30'–49°; longitude 119°–119° 30'.]

From Tonasket along highway northwest to Bright Spot mining camp.

Tonasket, 2 miles west of, 10 feet west of road; iron post stamped "1322 T"-----	1,314.998
Watkins ranch, 100 feet east of corral, 25 feet east of road near section corner; top of stone-----	1,320.29

From Tonasket north along highway to Oroville.

Tonasket post office, 200 feet southeast of, 150 feet north of barn, near ferry derrick on west bank of Okanogan River; iron post stamped "904"-----	895.875
Griffin ranch, 0.25 mile west of house at mouth of lane, 30 feet west of road, 0.5 mile west of Okanogan River; iron post stamped "958 T"-----	950.708
McDonald ranch, 1.5 miles south of, 0.25 mile south of Loomis road forks, 20 feet east of road; top of large bowlder marked "984"-----	976.84
Battomly ranch, about 0.5 mile west of Okanogan River, southwest of house, 15 feet west of road; iron post stamped "945 T"-----	987.162
Battomly ranch, 0.25 mile west of house, 10 feet west of road; top of large bowlder marked "968"-----	960.99
Similkameen River; surface of water-----	911

From Oroville southwest along highway to Blue Lake.

Monroe ranch, 1 mile west of, 5 feet north of road, in bottom of telephone pole; nail marked "1342"-----	1,334.36
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From Riverside northeast along highway to Anglin, thence northwest to Tonasket.

Cutts ranch, 1 mile south of, 20 feet east of road, 50 feet east of small creek, near milepost 11; iron post stamped "2183"-----	2,175.025
Chewiliken Valley, foot of, at north side of road at beginning of steep grade; top of large bowlder marked "2596"-----	2,578.25
Chewiliken Valley, 1 mile north of Cutts ranch, in root of fir tree 15 feet east of road; nail marked "2687"-----	2,679.84
Foster ranch (Chewiliken Valley), 300 feet west of house, 150 feet south of road, in root of 36-inch pine tree; nail marked "3057"-----	3,049.82
Talkire Lake, surface of water-----	3,008
Talkire Lake, 0.5 mile north of, 5 feet east of road; top of stone marked "3147"-----	3,139.73
Summit, divide between Chewiliken Valley and Bonaparte Creek, 10 feet east of State road, 500 feet north of small lake; iron post stamped "3216"-----	3,208.677

	Feet.
Griggs ranch, 0.5 mile southwest of house, 5 feet east of road, in root of pine tree; nail marked "2522"-----	2,514.34
Junction of State road (locally known as the Cutoff road) and main road up Bonaparte Creek, 200 feet north of Bonaparte Creek and 5 feet north of county road; iron post stamped "2116"-----	2,108.651
Pasley ranch, 0.8 mile east of house, north side of road; top of stone, tree near marked "U. S. B. M. 2091"-----	2,083.92
Pasley ranch, 1 mile west of, at mouth of deep canyon, 25 feet south of wagon road; top of large boulder marked "1992"-----	1,984.14
Government Indian school, 2.5 miles northeast of, north side of road, road up Antoine Valley 0.25 mile west; top of large stone marked "1482"-----	1,474.26
Tonasket post office (Parry's ferry), 300 feet southeast of store, 150 feet northeast of barn, at ferry derrick on west bank of Okanogan River; iron post stamped "904 T"-----	895.875

From Tonasket along highway northeast to Antoine Valley (spur line; elevations unreliable).

Antoine Valley, 1 mile northeast of Duffy ranch, 0.25 mile north of Government sawmill road, at corner of Tpa. 37 and 38 N., Ra. 27 and 28 E.; iron post stamped "1499 T"-----	1,489.574
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From Anglin along highway northeast to Van Brunt ranch.

Junction of State road and road along Bonaparte Creek, 5 feet west of road and 200 feet north of creek; iron post stamped "2116 T"-----	2,108.651
Paterson ranch, 1.5 miles west of, 20 feet south of road, in root of pine tree; nail marked "2283"-----	2,275.84
Best ranch, 0.25 mile west of house, north side of road, at northwest corner of fence; top of stone marked "2335"-----	2,327.95
Best ranch, 1 mile east of, 100 feet south of road, near pine tree marked "U. S. G. S."; top of stone marked "2512"-----	2,504.64
Bingham Flat, east end of, 10 feet north of road; top of stone marked "3272"-----	3,284.14
Lamming store, 100 feet north of, 5 feet north of road crossing Bonaparte Creek, 10 feet south of creek; iron post stamped "3333 T"-----	3,325.936
Van Brunt ranch, 300 feet east of house, in forks of road; iron post stamped "3711 T"-----	3,714.299

From Best ranch along highway southeast to Joe Aeneas ranch (spur line; elevations unreliable).

Best ranch, 500 feet northeast of house, 30 feet north of road, 20 feet south of creek crossing, near mouth of Aeneas Valley; iron post stamped "2876 T"-----	2,368.232
Kayle ranch, 0.25 mile east of house, at crossroads, about 3 miles from mouth of Aeneas Valley; iron post stamped "2541 T"-----	2,583.097
Rupert ranch, 500 feet east of house, 50 feet north of garden fence, in root of pine tree; nail marked "2626"-----	2,618.32
Chief Aeneas ranch, 400 feet south of house, 4 feet east of road, 200 feet southwest of barn; iron post stamped "2625 T"-----	2,617.387
Joe Aeneas ranch, 0.25 mile southeast of, 20 feet north of road, in top of small hill; iron post stamped "2676"-----	2,668.576
Koby ranch, 0.8 mile northwest of, 1,000 feet southeast of bridge over creek, 100 feet east of road; top of stone marked "2455.572"-----	2,448.10

From Beaver Creek (Harvey ranch) along highway northwest to Chesaw,
thence west to Oroville.

	Feet.
Fork road to Crystal Butte mine, 100 feet north of; top of large stone marked "3743"-----	3, 736. 353
Chesaw, 200 feet north of United States customhouse, opposite Morrison Brothers' hotel; iron post stamped "2917 T"-----	2, 910. 433
Chesaw schoolhouse, southeast corner; top of stone marked "3013"-----	3, 006. 16
Field ranch, 0.5 mile west of, south side of road; top of bowlder marked "3893"-----	3, 886. 14
He He rock, 1,000 feet west of, summit between Meyers Creek and Okanogan River, 5 feet west of road; iron post stamped "4091 T"-----	4, 084. 078
Kipling post office, 100 feet southwest of, 200 feet north of Tonasket Creek, 5 feet south of road; iron post stamped "3698 T"-----	3, 691. 005
Hawthorn store, 300 feet west of, fork of road; iron post stamped "3387 T"-----	3, 380. 040
McDonald ranch, 0.8 mile east of, 20 feet north of road, 400 feet north of Tonasket Creek; iron post stamped "1959 T"-----	1, 951. 537
Grayson ranch house, 400 feet east of, north side of road; top of large stone marked "1589"-----	1, 582. 09
Okanogan River, 1.5 miles east of, in ford of Tonasket Creek; top of stone marked "1117"-----	1, 109. 85
Oroville, southeast corner of lot at corner of Main and River streets, 200 feet south of Oroville Trading Co.'s store; iron post stamped "928 T"-----	920. 572

From Chesaw north along highway to Canadian boundary line (spur line;
elevations unreliable).

Chesaw, 0.25 mile north of, west side of road; top of stone marked "2886"-----	2, 878. 59
International boundary line, east side of road, 600 feet west of Meyers Co.; iron post stamped "2631 T"-----	2, 624. 199
Boundary monument 75, top of-----	2, 728. 598
Boundary monument 75, base of-----	2, 721. 98

From Oroville north along highway to Canadian boundary line (spur line;
elevations unreliable).

Osoyoos Lake, at foot; surface of water October 21, 1901-----	911. 6
Okanogan Smith ranch, at fence corner at corner of lane just east of house; top of rock marked "952"-----	944. 53
International boundary line, 0.1 mile east of Osoyoos Lake, 800 feet west of road, 2 feet south of boundary monument 89; iron post stamped "1058 T"-----	1, 050. 382

From Oroville northwest along highway up Similkameen River 4 miles.

Similkameen River, 300 feet south of, south side of road, on high bluff; top of rock marked "1097"-----	1, 089. 748
Okanogan Free Gold Mining Camp, 100 feet east of bunk house, 800 feet east of stamp mill; top of large bowlder marked "1224"-----	1, 216. 48
Okanogan Free Gold Mining Camp, 1 mile northwest of, north side at end of road, 0.5 mile east of Okanogan River, 0.5 mile south of falls; iron post stamped "1415 T"-----	1, 407. 697

REPUBLIC QUADRANGLE.

[Latitude 48° 30'–49°; longitude 118° 30'–119°.]

From Republic northeast along Kettle Falls road to Missouri Perkins ranch
(spur line; elevations unreliable).

Feet.

Republic, 2.5 miles east of, 1,000 feet west of Republic Brewery, 5
feet south of road, at foot of steep grade; iron post stamped
"2345 S"----- 2, 348. 207
T. 37 N., R. 34 E., NW. $\frac{1}{4}$ sec. 19, 10 feet southeast of house on Mis-
souri Perkins ranch, 5 feet west of State road; iron post stamped
"4113 S"----- 4, 117. 248

From Republic south down Sanpoll River road to Alkire (spur line; elevations
unreliable).

Rabbit Creek, 150 feet north of, on Sanpoll River, 10 feet east of
road, 600 feet north of milepost 9; iron post stamped "2142" S--- 2, 145. 351

From Republic west along State road to Van Brunt ranch.

Republic, northeast corner of schoolhouse, in stone foundation at base
of tower; aluminum tablet stamped "2500 S"----- 2, 503. 137
Welsh sawmill, 1 mile west of, 3 feet north of road at point just east
of steep grade; iron post stamped "2922 S"----- 2, 925. 189
Limekiln, 1,000 feet east of, 3 miles east of Wauconda Mining Camp,
4 feet south of road; iron post stamped "3664 S"----- 3, 667. 221
Van Brunt ranch, 300 feet east of house, at junction of Chesaw stage
road and Okanogan State road; iron post stamped "3711 S"----- 3, 714. 299

From Republic north along county road to Curlew.

Torboy, at west end of lane to Dessertelle ranch, east side of road at
junction with Marcus State road; iron post stamped "2411 S"--- 2, 414. 43
Curlew Lake, south end of; surface of water, May 14, 1901----- 2, 345
T. 38 N., R. 33 E., sec. 14, 100 feet south of ford, 5 feet north of road,
at St. Peters Creek; iron post stamped "2217 S"----- 2, 220. 613

From Curlew Lake west along Creek road to township corner (spur line;
elevations unreliable).

T. 38 N., R. 32 E., 5 feet northwest of southeast corner, 400 feet west
of house of McCool ranch; iron post stamped "2674 S"----- 2, 677. 079

From mouth of St. Peters Creek east over trail to forks of St. Peters Creek
(spur line).

T. 38 N., R. 34 E., 1,000 feet southeast of northwest corner of sec. 19,
0.5 mile east of forks of St. Peters Creek, 1 mile west of Olliver
ranch, north side of road; iron post stamped "2839 S"----- 2, 842. 272

From Curlew east along trail up Long Alex Creek 2 miles to Semore ranch
(spur line).

Semore ranch, 0.8 mile east of, 100 feet south of Long Alex Creek, 5
feet south of road; iron post stamped "2399 S"----- 2, 402. 696

From Curlew west along Kettle River road to Midway, B. C. (spur line;
elevations unreliable).

Curlew, 800 feet south of post office, 100 feet south of Long Alex
Creek, south side of road; iron post stamped "1814 S"----- 1, 817. 460
Goosmus Creek, 400 feet north of, 150 feet north of barn, 12 feet east
of road; iron post stamped "1768 S"----- 1, 771. 397

Up Goosmus Creek 2 miles to Louie ranch (spur line; elevations unreliable).	Feet.
Manuel Louie ranch, 300 feet north of southeast corner of fence, 10 feet east of fence, 10 feet west of road, about 0.3 mile north of Goosmus Creek; iron post stamped "2618 S"-----	2, 619. 560
From Curlew west along Kettle River road to Midway, B. C. (spur line; elevations unreliable).	
Castello ranch, 2 miles west of, opposite mouth of Tonata Creek, 75 feet north of Kettle River, 5 feet north of wagon road; iron post stamped "1828 S"-----	1, 831. 810
T. 40 N., R. 32 E., sec. 27, at Lynch ranch, 0.2 mile east of mouth of Toroda Creek, 100 feet north of Kettle River, 10 feet north of road, 100 feet west of old stone building; iron post stamped "1851 S"-----	1, 854. 314
From Lynch ranch via Toroda Creek to Van Brunt ranch.	
Cox ranch, 1 mile south of, about 0.6 mile north of Marias Creek, 400 feet west of Toroda Creek, 4 feet west of road; iron post stamped "2228 S"-----	2, 231. 101
Harvey ranch, 1,000 feet south of house, 50 feet south of junction of Chesaw and Toroda roads, 1,000 feet south of mouth of Beaver Creek, west side of road; iron post stamped "2460 S"-----	2, 463. 188
Toroda, 500 feet north of post office, at north end of street, west side of road, 100 feet south of small bridge over creek; iron post stamped "2932 S"-----	2, 935. 818
From point near Republic east along highway to milepost 11.	
Kaylor, 300 feet west of post office, about sec. 7, T. 36 N., R. 34 E., 150 feet east of milepost 8, on east bank of creek near pole bridge, south side of road; iron post stamped "3496 S"-----	3, 499. 518
Seward station (stage), 1.5 miles east of, 20 feet north of milepost 11, in root of fir tree; nail-----	4, 665. 57
From mouth of Beaver Creek northwest along road to Chesaw (part of line).	
Beaver Creek, 1,000 feet south of mouth, 50 feet south of road up Beaver Creek, 1,000 feet south of Harvey ranch, west side of road; iron post stamped "2460 T"-----	2, 463. 188
Pemberton ranch, 1 mile west of, north side of road, in root of fir tree; nail marked "2520"-----	2, 521. 381
Fish Lake, on road along north side, 5 feet above water surface-----	2, 557
Summit, 1.5 miles east of, 50 feet west of road; top of large bowlder, marked "3401"-----	3, 402. 33
Milepost 4, 100 feet west of, 20 feet south of road, in root of large fir tree; nail marked "3654"-----	3, 655. 721
T. 39 N., R. 30 E., southwest corner of sec. 12, 5 feet north of road; iron post stamped "4131 T"-----	4, 123. 952

KELLER QUADRANGLE.

[Latitude 48°-48° 30'; longitude 118° 30'-119°.]

From Alkire via trail up first west fork of Sanpoil River to county line (part of spur line; elevations unreliable).	
Alkire, 200 feet east of Alkire Hotel, 150 feet south of store, in corner of fence, 5 feet south of road; iron post stamped "1965 S"-----	1, 968. 010
Tps. 34 and 35 N., Rs. 31 and 32 E., 0.2 mile south of corner, 150 feet west of Okanogan County boundary line, 20 feet north of trail, in large bowlder; aluminum tablet stamped "2295 S"-----	2, 298. 328

Bacon, Chelan, Coulee City, Hicksville, Jameson, Moses Lake, and Wilson Creek quadrangles.

CHELAN, DOUGLAS, AND GRANT COUNTIES.

The elevations in the following list were determined by primary leveling extended from the precise-level line of the Coast and Geodetic Survey along the Northern Pacific Ry.

The leveling was done as follows: Coulee City and Wilson Creek quadrangles in 1903 by R. A. Farmer; Hicksville and Moses Lake quadrangles in 1903 by R. B. Shaw; Chelan quadrangle in 1898 by E. M. Fry, in 1897 by P. F. Byrne, in 1903 by Farmer, and in 1912 by R. I. Thomas; Moses Lake and Jameson quadrangles in 1899 by Fry and in 1903 by Farmer; and Bacon quadrangle in 1903 by Farmer and Shaw and in 1909 by C. H. Semper. During 1910, in cooperation with the State, additional leveling in the Moses Lake quadrangle was done by D. S. Birkett.

CHELAN QUADRANGLE.

[Latitude 47° 30'–48°; longitude 120°–120° 30'.]

From point about 7 miles north of Wenatchee north along road up west side of Columbia River and up Knapp Coulee to Chelan.

	Feet.
T. 24 N., R. 20 E., sec. 26, near mouth of Swakane Creek, 10 feet west of State road and 10 feet north of road up Swakane Valley; iron post stamped "696 T"-----	696.474
O'Connor's ferry, 100 feet southwest of ferry derrick, on west side of road, top of granite boulder-----	706.2
T. 25 N., R. 21 E., north side of sec. 20, 250 feet northwest of Entiat River bridge, 150 feet northeast of store on north side of road; iron post stamped "696 T"-----	696.707
T. 26 N., R. 21 E., south side of sec. 20, 200 feet northwest of J. T. Fisher house, 6.0 miles southwest of Knapp's ferry, near steam ferry landing; iron post stamped "705 T"-----	705.392
Knapp's ferry, fractional sec. 12, T. 26 N., R. 21 E., opposite Troy, 35 feet south of warehouse, at south side of granite boulder; iron post stamped "709 T"-----	709.286
Knapp Coulee, near northwest corner of cornfield, on top of large boulder (5 cubic yards), on stage road-----	1,209.13
Tps. 26 and 27 N., and Rs. 21 and 22 E., in Knapp Coulee, 710 feet west of corner; iron post stamped "1370"-----	1,340.000
Navarre's east fence, about 400 feet east of and about 60 feet south of road, top of rock 6 feet high and 6 feet in diameter-----	1,145.76
Lakeside, about 100 feet from Lake Chelan, set inside of Capt. Johnson's fence; iron post stamped "1121"-----	1,091.182
Lakeside, at wharf; water level 4 p. m. Aug. 13, 1897-----	1,078
Lake Chelan, near gate 100 feet from, in root of pine tree; wire nail-----	1,084.48
Chelan, 125 feet left of road opposite cut bank, Chelan River, on top of boulder-----	1,207.99
Lake Chelan, water level on north side, 12.30 p. m., July 31, 1897-----	1,079

	Feet.
Lakeside, at wharf in front of Lakeview Hotel; water level in Lake Chelan at 3 p. m., June 8, 1899-----	1, 080. 7
Chelan, 0.5 mile west of, 50 feet west of south end of bridge over Chelan River; top of bowlder-----	1, 068. 98
From Columbia River along highway north up Navarre Coulee to summit of ridge (spur line; elevations unreliable).	
T. 27 N., R. 21 E., quarter corner secs. 16 and 21; top of corner stone-----	1, 465. 7
T. 27 N., R. 21 E., sec. 9, 300 yards southwest of log cabin, 40 feet east of road, on a knoll in clump of pine trees, at top of ascent on south side of ridge; iron post stamped "1864 T"-----	1, 064. 140
From Columbia River northwest along highway up Entiat Valley (spur line; elevations unreliable).	
T. 26 N., R. 20 E., sec. 20, 200 feet north of Gray house, in northeast corner of fence 5 feet west of road, in granite bowlder; aluminum bolt stamped "1816 T"-----	1, 816. 618
T. 27 N., R. 19 E., sec. 2, 100 feet north of log house, 100 feet west of crib, east side of trail up Entiat River, in large granite bowlder; aluminum bolt stamped "1680"-----	1, 680. 824
From Columbia River west along highway and trail up Swakane Canyon and south down Nehookum Canyon to Mission.	
T. 24 N., R. 19 E., sec. 11, summit of divide between Swakane and Nehookum canyons, 10 feet west of trail, in granite bowlder; aluminum bolt stamped "3255"-----	3, 255. 847
Mission, in front of Great Northern Ry. station; top of rail-----	796. 1
Mission, 150 feet southwest of station, 100 feet south of railroad water tank, at corner in center of NW. $\frac{1}{4}$ sec. 4, T. 23 N., R. 19 E.; iron post stamped "797 T"-----	797. 320
From O'Connor's ferry along highway east to Waterville, thence north to Knapp's ferry.	
O'Connor's ferry landing, 400 feet east of, 1.0 mile southwest of Orondo, on north side of road and east bank of Columbia River; iron post stamped "678 T"-----	678. 864
T. 25 N., R. 22 E., 42 feet northeast of corner of secs. 29, 30, 31, and 32; iron post stamped "2771 T"-----	2, 771. 510
T. 25 N., R. 22 E., corner of secs. 19, 20, 29, and 30, top of stone set for corner-----	2, 799. 63
Waterville, Douglas County courthouse, in east wall of brick vault on south side of, 2 feet from ground and 2 feet from southeast corner of vault; aluminum tablet stamped "2617 T"-----	2, 617. 361
Waterville, Douglas County Bank building, in front wall, 2 feet from sidewalk and 2 feet north of entrance door; aluminum tablet stamped "2624 T"-----	2, 624. 087
T. 26 N., R. 22 E., southeast corner of sec. 28, on front or south side of foundation of schoolhouse, 1.5 feet from ground and 2 feet from southeast corner; aluminum tablet stamped "3004 T"-----	3, 004. 853
T. 26 N., R. 22 E., sec. 29, at head of Bunn's Canyon, 250 feet northwest of small house, 10 feet from east side of road; iron post stamped "3055 T"-----	3, 054. 938

	Feet.
Troy post office, 1,000 feet southwest of, just opposite warehouse at Knapp's ferry, on left bank of Columbia River; iron post stamped "725 T"-----	725. 225
From Dobson ranch along highway by circuitous route to south via Badger Mountain to Waterville.	
T. 24 N., R. 21 E., sec. 12, Badger Mountain, at junction of roads on summit; iron post stamped "4145"-----	4, 144. 954
T. 25 N., R. 22 E., southeast corner of sec. 33, 150 feet southeast of schoolhouse (district 3), on north side of road; iron post stamped "2736 T"-----	2, 736. 151
From road summit on Badger Mountain south along highways to sec. 11, T. 23 N., E. 31 E. (checked spur line).	
T. 24 N., R. 21 E., sec. 12, across first culvert south of summit, on west side of road, 0.4 mile south of summit; copper nail in small pine stump, painted "U. S. 4091"-----	4, 091. 95
T. 24 N., R. 21 E., sec. 13, 1.5 miles north of old sawmill, 0.8 mile south of summit, 50 feet west of fence on west side of road; copper nail in stump, painted "4036"-----	4, 035. 63
T. 24 N., R. 21 E., sec. 14, on west side of canyon, about 400 feet north of road; nail in top of stump-----	3, 940. 30
T. 24 N., R. 21 E., sec. 23, 0.2 mile south of Pine Grove schoolhouse, on west side of road, on top of first ridge south of schoolhouse; copper nail in stump, painted "U. S. 3691"-----	3, 691. 24
Pine Grove schoolhouse, 1.2 miles south of, in center of sec. 26, T. 24 N., R. 21 E., 30 feet east of road; iron post stamped "3619"-----	3, 618. 389
T. 24 N., R. 21 E., sec. 26, 400 feet south of above permanent bench mark; nail in telephone post, painted "3593"-----	3, 592. 48
T. 24 N., R. 21 E., on north line of sec. 35, 0.9 mile north of road to west, west side of road; nail in telephone post, painted "U. S. 3421"-----	3, 421. 33
T. 24 N., R. 21 E., south line of sec. 35, on first road to west, at foot of Badger Mountain, 300 feet from junction; nail in fence post, painted "U. S. 3258"-----	3, 257. 76
T. 23 N., R. 21 E., sec. 2, 500 feet north of crossroads; nail with washer in fence post, painted "U. S. 3103"-----	3, 103. 24

JAMESON QUADRANGLE.

[Latitude 47° 30'-48°; longitude 119° 30'-120°.]

From Chelan north along State road to Alta Lake.

Chelan, 3.25 miles north of, 0.25 mile north of Wilson ranch house, 15 feet west of road; iron post stamped "1417 T"-----	1, 417. 396
Johnson ranch, northeast corner of, 200 feet west of road and south side of drain; on stone-----	1, 330. 97
Antoine ranch, 1.0 mile south of, 25 feet east of road, 500 feet north of milepost 48; iron post stamped "1361 T"-----	1, 361. 369
Willis ranch, 300 feet south of and 50 feet east of northeast corner of fence, at side of road; highest point of stone-----	1, 460. 01
McCarty ranch, 0.5 mile north of, 100 feet east of State road, on highest point of stone set for quarter corner of township line-----	1, 425. 27

From point near Baird west along highway to Waterville.

	Feet.
T. 25 N., R. 26 E., 15 feet south of standard section corner to secs. 35 and 36, 2.5 miles west of Baird; iron post stamped "2441 T"-----	2, 441. 381
T. 25 N., R. 26 E., corner of secs. 27, 28, 33, and 34, 520 feet south of, 20 feet north of road, near telephone pole 533; iron post stamped "2386 T"-----	2, 386. 957
Telephone pole 641, 4 feet west of; iron post stamped "2185 T"-----	2, 185. 559
White Sulphur Springs, 400 feet north of; top of large rock marked with circle of paint, marked "1951"-----	1, 951. 540
White Sulphur Springs, 0.25 mile west of, 10 feet north of road; iron post stamped "1883 T"-----	1, 883. 797
Moses Coulee, at bottom of west side of, 6 feet west of telephone pole; iron post stamped "1670 T"-----	1, 670. 480
Dewey triangulation station, top of; bronze tablet stamped "2609 T"-----	2, 609. 035
Farmer, 2.5 miles east of, 8 feet west of telephone pole 915; iron post stamped "2539 T"-----	2, 539. 822
Farmer, 1.0 mile west of, 5 feet east of telephone pole 1033; iron post stamped "2371 T"-----	2, 370. 887
Telephone pole 1144, 4 feet east of; iron post stamped "2505 T"-----	2, 505. 673
Telephone pole 1241, 6 feet east of; iron post stamped "2472 T"-----	2, 472. 339
Douglas, 0.5 mile north of, 10 feet north of telephone pole 1336; iron post stamped "2509 T"-----	2, 509. 232

From Chelan southeast to Chelan Falls (spur line; elevations unreliable).

Coulee, at north end of, 48 feet east from 15-inch pine tree, near rock slide; top of rock 2 by 5 by 2 feet-----	1, 179. 40
Chelan River, near head and on left of gulch opening into, near large rock bluff; top of rock-----	996. 0
Chelan Falls, at southwest corner of intersection of Chelan Avenue and First Street, near northeast corner of hotel; iron post stamped "764"-----	733. 702

COULEE CITY QUADRANGLE.

[Latitude 47° 30'—48°; longitude 119°—119° 30'.]

From Sprague water tank north along Northern Pacific Ry. to Coulee City, thence west along highway to point near Baird.

Milepost 8, 250 feet north of, west of track; iron post stamped "1522 T"-----	1, 523. 082
Milepost 7, 4 feet east of; top of iron peg 4 feet long in ground, marked "1552"-----	1, 522. 32
Milepost 5, 1,200 feet south of, 20 feet east of track; iron post stamped "1647 T"-----	1, 647. 436
Coulee City, 2.0 miles east of, 350 feet north of milepost 2, 200 feet northwest of railroad crossing; iron post stamped "1711 T"-----	1, 711. 857
Coulee City, southeast corner of station, 4 feet east of; iron post stamped "1584 T"-----	1, 584. 089
Coulee City, 3.1 miles west of, 8 feet north of telephone pole 109, south of road; iron post stamped "1602 T"-----	1, 602. 292
Coulee City, 6.0 miles west of, 10 feet north of telephone pole 211; iron post stamped "2240 T"-----	2, 240. 821
T. 25 N., R. 27 E., 20 feet south of standard corner to secs. 32 and 33, 1.0 mile east of Baird; iron post stamped "2452 T"-----	2, 452. 612

18249°—Bull. 557—14—4

From Elmira west along Northern Pacific Ry. to Coulee City.

	Feet.
Hartline, on Northern Pacific Ry., east of station; iron post stamped "1911 T"-----	1, 911. 443
Hartline, 5.25 miles west of, at milepost 102; iron post stamped "1821 T"-----	1, 820. 510

BACON QUADRANGLE.

[Latitude 47° 15'–47° 30'; longitude 119° 15'–119° 30'.]

From Moses Lake west along highway to Ephrata.

Moses Lake, 2.9 miles north of, 10 feet west of road, in granite outcrop; tablet stamped "1089 T"-----	1, 089. 199
Moses Lake, 6.0 miles north of, 8 feet southwest of road, in 2 by 2 foot boulder 1 foot above ground; tablet stamped "1274 T"-----	1, 274. 199

From point 4 miles southeast of Ephrata southeast and north along highway to Great Northern Ry. (part of line).

Ephrata, 6.0 miles south of, on road down east side of Moses Lake, west margin of road; top of large rock marked "U. S. ☐ B. M. 1130"-----	1, 130. 15
T. 21 N., R. 27 E., southwest corner of sec. 33, 7.0 miles south of Ephrata; iron post stamped "1066"-----	1, 066. 625
Gibbons ranch, 1.0 mile north of, on west margin of road; top of rock marked "U. S. ☐ B. M. 1069"-----	1, 069. 38
Crab Creek, Joe Ogen ranch, about 800 feet northwest of house, at corner of wire fence; iron post stamped "1071"-----	1, 070. 993
Crab Creek, at angle in road, opposite ranch house and sheep pens, west side of road; top of large rock marked "U. S. ☐ B. M. 1079"-----	1, 079. 93
Crab Creek, 1.6 miles south of railroad, on east side of road; top of large rock marked "U. S. ☐ B. M. 1124"-----	1, 124. 30
Milepost 1596, 4 feet east of; iron post stamped "1251 T"-----	1, 251. 974

From Adrian south along highway toward Moses Lake (spur line; elevations unreliable).

Milepost 1590, 4 feet east of; iron post stamped "1188 T"-----	1, 188. 534
Adrian, 2.8 miles south of, 30 feet south of Cowell ranch house at corner of chicken yard; iron post stamped "1210"-----	1, 210. 478
Adrian, 3.6 miles south of, at north end of small coulee on west side; top of rock marked "U. S. ☐ B. M. 1173"-----	1, 174. 38
Adrian, 4.7 miles south of, 1,200 feet south of G. M. Walher house, 100 feet north of wire fence; top of outcrop marked "U. S. B. M. 1165"-----	1, 165. 01

From point near Ephrata northeast along Great Northern Ry. to Adrian.

Milepost 1596, 4 feet east of; iron post stamped "1251 T"-----	1, 251. 974
Milepost 1593, 4 feet east of; iron post stamped "1233 T"-----	1, 233. 300
Milepost 1590, 4 feet east of; iron post stamped "1188 T"-----	1, 188. 534

From Adrian east along Great Northern Ry. to Stratford.

Milepost 1587, 4 feet east of; iron post stamped "1252 T"-----	1, 252. 438
Stratford, 5 feet west of, milepost 1584; iron post stamped "1277 T"-----	1, 277. 453

From Adrian north along Northern Pacific Ry. to Coulees City (part of line).	
	Feet.
Milepost 18, 12 feet north of, 20 feet west of track; iron post stamped "1351 T"-----	1, 352. 145
Milepost 15, 100 feet north of, east of track; iron post stamped "1489 T"-----	1, 489. 714
Sunbath, 400 feet south of section house, 30 feet west of track; iron post stamped "1522 T"-----	1, 522. 811

WILSON CREEK QUADRANGLE.

[Latitude 47° 15'–47° 30'; longitude 119°–119° 15'.]

From Adrian east along Great Northern Ry. to point near Wilson Creek (part of spur line; elevations unreliable).

Milepost 1581, 150 feet north of; iron post stamped "1259 T"-----	1, 260. 055
Wilson Creek Wash, 2.0 miles west of, at road crossing, 8 feet east of signboard; iron post stamped "1272 T"-----	1, 273. 070

HICKSVILLE QUADRANGLE.

[Latitude 47°–47° 15'; longitude 119°–119° 15'.]

From Lind west along road and trail to Moses Lake (part of line).

T. 18 N., R. 30 E., 750 feet east of center of sec. 20, 27.1 miles west of Lind, 75 feet west of old trail; iron post stamped "1153 T"-----	1, 152. 986
T. 18 N., R. 29 E., SW. $\frac{1}{4}$ sec. 13, 8 feet north of old McManan trail, on summit of very small ridge running north and south, 30 miles west of Lind; iron post stamped "1157 T"-----	1, 157. 075
Lind, 33 miles west of, 20 feet west of road, 100 feet north of forks in road, 600 feet east of north from small shanty; iron post stamped "1225 T"-----	1, 224. 894
T. 19 N., R. 29 E., northwest corner of sec. 20, 39.3 miles west of Lind, 7 feet north of road; iron post stamped "1189 T"-----	1, 188. 769

MOSES LAKE QUADRANGLE.

[Latitude 47°–47° 15'; longitude 119° 15'–119° 30'.]

From Lind west along road and trail to Moses Lake (part of line).

T. 19 N., R. 28 E., sec. 24, 42.6 miles northwest of Lind, east edge of Moses Lake, 300 feet northwest along east side of lake, in 6-foot by 8-inch rock 2 feet above ground; tablet stamped "1049 T"-----	1, 048. 878
Moses Lake, surface of water Sept. 28, 1903-----	1, 046. 100

Moses Lake, bench marks in vicinity established from water surface.

Moses Lake, foot of, 50 feet east of edge, 40 feet south of dim road, in 2 by 4 foot rock, 1 foot out of ground; tablet stamped "1070 T"-----	1, 069. 902
Moses Lake, east side of, in T. 20 N., R. 28 E., a trifle east of triangulation station Lewis, in large loose boulder by water's edge; tablet stamped "1049 T"-----	1, 049. 483

From Moses Lake northwest along highway to Ephrata.

Moses Lake, 15 feet west of, across head of lake from very old haystack, in large flat-topped boulder (granite) 6 by 8 by 3 feet high; tablet stamped "1049 T"-----	1, 049. 331
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From point 3 miles north of north end of Moses Lake south along road west of lake to Mae, thence west to point 3 miles south of Morrison.

	Feet.
T. 21 N., R. 27 E., 0.1 mile west of north-south line between secs. 32 and 33, on township line and south line of sec. 32, 7 miles south of Ephrata; iron post stamped "1066"-----	1,066.625
Moses Lake, 2.9 miles north of, 10 feet west of road, in granite outcrop; aluminum tablet stamped "1089 T"-----	1,069.199
Drumhiller ranch, 0.8 mile south of, 0.3 mile west of Crab Creek, 45 feet east of road and 30 feet west of north-south fence; point on basalt boulder marked "U. S. 1065.6 B. M."-----	1,065.80
Moses Lake, 1.5 miles north by 0.5 mile west of head of, 2 miles south of Drumhiller ranch house, 1.3 miles north of J. Sargent ranch house, 175 feet east of road, 175 feet south of fence corner, in granite boulder 4 by 4½ by 4 feet; aluminum tablet stamped "1092 Wash"-----	1,092.644
Moses Lake, 0.25 mile west of, 500 feet south of intersection of roads on bench, on east fork and 0.6 mile south of head of lake; point on basalt boulder 2½ by 1½ by 1½ feet marked "U. S. 1117 B. M."-----	1,117.57
Moses Lake, 1.3 miles south of head of, at top edge of mesa, 200 feet west of lake and 119 feet above present surface of lake, near section line between secs. 33 and 34, T. 20 N., R. 27 E., 15 feet east of road; iron post stamped "1157 Wash"-----	1,157.451
Moses Lake, 1.3 miles south of head of, 35 feet west of road, on west side of lake, at top of hill; point on basalt boulder marked "U. S. 1154.7 B. M."-----	1,154.87
Mae, 2 miles north of, 4.2 miles south of head of Moses Lake, 1.3 miles east of lake and 0.6 mile northwest of pink-colored schoolhouse (West Shore school), 15 feet east of road; point on basalt boulder marked "U. S. 1101 B. M."-----	1,101.29
West Shore schoolhouse, northeast corner of sec. 14, T. 19 N., R. 27 E., in northeast corner of school yard; iron post stamped "1107 Wash"-----	1,107.081
Mae, 3.2 miles west of, 5 feet north of road, on edge of bench, 1,000 feet east of Maxwell's pumping plant; on low-lying basalt boulder 2 by 1 foot; point marked "U. S. 1091 B. M."-----	1,090.66
T. 19 N., R. 27 E., 250 feet west of quarter section corner between secs. 20 and 29, 3.4 miles west of Mae, 50 feet east of Maxwell's pumping plant, north side of road, 33 feet north of section line, in low-lying basalt boulder 2 by 1½ feet; aluminum tablet stamped "1075 Wash"-----	1,075.492
T. 19 N., R. 27 E., southwest corner of sec. 18; iron post stamped "1235 Wash"-----	1,235.053
T. 19 N., R. 26 E., northwest corner of sec. 22, 2 miles south by 0.5 mile east of Morrison; iron post stamped "1226 Wash"-----	1,226.340

From Mae post office east along highways to Moses Lake.

T. 19 N., R. 27 E., northeast corner of sec. 26, 1,225 feet east of Mae; iron post stamped "1067 Wash"-----	1,066.730
T. 19 N., R. 27 E., 0.8 mile east of southeast corner of sec. 24, 70 feet west of Moses Lake, on bench 20 feet above water, 30 feet west of edge of bench, end of road leading east to lake, 80 feet east of point where east road intersects north-south road; iron post stamped "1058 Wash"-----	1,058.580
Moses Lake; surface of water August 3, 1910-----	1,038.29

From Mae south via south end of Moses Lake to sec. 28, T. 18 N., R. 28 E.

	Feet.
T. 18 N., R. 28 E., about 200 feet east of southwest corner of NE. $\frac{1}{4}$ NE. $\frac{1}{4}$ sec. 6 (40-acre corner), 150 feet west of James Lee ranch house, in line of fences at fence corner; iron post stamped "1040 Wash"-----	1, 039. 725
T. 18 N., R. 27 E., on south line of NE. $\frac{1}{4}$ sec. 14, about 1,400 feet east of southwest corner of that quarter, 20 feet east of edge of mesa, 100 feet north of dim road which turns down hill and leads to southwest, 0.4 mile northwest of most northerly of potholes containing water; iron post stamped "1107 Wash"-----	1, 107. 302
T. 18 N., R. 27 E., near northwest corner of sec. 28, 15 feet east of dim road, spike in knuckle at base of lone willow tree 14 inches in diameter marked "U. S. 1031 B. M."-----	1, 030. 67
T. 18 N., R. 27 E., NW. $\frac{1}{4}$ sec. 28, on little knoll, edge of bench which rises abruptly 35 feet overlooking sand dunes on lowland to east, 2 miles west of lone willow tree 14 inches in diameter alongside of dim north-south road, witnessed by willow pole 8 feet high with flag; iron post stamped "1077 Wash"-----	1, 076. 865
T. 18 N., R. 27 E., in NW. $\frac{1}{4}$ sec. 30, about middle of mesa east-west, 400 feet south of long east-west sand ridge 15 feet high; point on top of granite boulder 3 by 5 by 3 $\frac{1}{2}$ feet, witnessed by willow pole 6 feet high with flag-----	1, 161. 55
T. 18 N., R. 26 E., southeast corner of sec. 28, 20 feet west of road; iron post stamped "1142 Wash"-----	1, 142. 678

From point 1 mile west of outlet of Moses Lake (Orab Creek), sec. 6, T. 18 N., R. 27 E., southeast around south end of Moses Lake, thence southeast to township line (sec. 35, T. 18 N., R. 28 E.), thence northeast to southeast corner of sec. 1, T. 18 N., R. 28 E. (unchecked spur line).

Moses Lake; surface of water Aug. 5, 1910-----	1, 038. 725
Moses Lake, south end of, 400 feet north of, 20 feet south of dim road, east side of lake on top of bench, in basalt boulder 2 feet long; aluminum tablet stamped "1070 T"-----	1, 069. 902
Moses Lake, 2.6 miles south-southeast of, edge of mesa about 100 feet above old lake bed, 18 feet east of edge of bench, south of most southerly of sand dunes on mesa; iron post stamped "1104 Wash"-----	1, 104. 101
T. 18 N., R. 28 E., southeast corner of sec. 35; iron post stamped "1080 Wash"-----	1, 080. 011
T. 18 N., R. 28 E., southeast corner of sec. 13; iron post stamped "1139 Wash"-----	1, 138. 870

From north end of Moses Lake to McConhlie's ranch (checked spur line).

Moses Lake; surface of water Aug. 15, 1910-----	1, 038. 16
Moses Lake, 1.25 miles south of head of, near southwest corner of NE. $\frac{1}{4}$ sec. 34, T. 20 N., R. 27 E., 400 feet east of lake on edge of first bench, 100 feet north of McConhlie's irrigation project headquarters, in granite boulder; aluminum tablet stamped "1072 Wash"-----	1, 072. 260

Fordnah, Haven, and Mitchell quadrangles.

BENTON, FRANKLIN, AND GRANT COUNTIES.

The elevations in the following list accord with the 1912 adjustment. It was necessary in taking account of this new line, which is supported by leveling of the United States Engineers, to increase

the elevations of Bulletin 457 in the Beverly quadrangle 0.3 foot. A residual closure error of 0.3 foot was then adjusted. A list of elevations determined by the United States Corps of Engineers corrected in accordance with this adjustment is included.

The leveling was done in 1913 by D. S. Birkett and the United States Corps of Engineers.

FORDNAH QUADRANGLE.

[Latitude 46° 30'–46° 45'; longitude 119° 15'–119° 30'.]

From Ringold northwest along highway up left bank of Columbia River to Locke School.

	Feet.
Ringold schoolhouse, 0.6 mile south of, at junction of river and post-office roads, southwest corner; spike in base of fence post, marked "U. S. 433 B. M."-----	433. 09
T. 12 N., R. 28 E., in sec. 24, at northwest corner of Ringold school-house yard, 15 feet east of corner; iron post stamped "392 Wash 1913"-----	391. 987
Ringold School, 0.9 mile northwest of, 0.5 mile south of Nagel's house, on private road down river, on east side of entrance to alfalfa field; spike in gate post, marked "U. S. 374 B. M."-----	374. 50
Ringold School, 1.5 miles northwest of, 300 feet south of house on Nagel's ranch, on power-line pole in front of pumping plant; spike in base of pole, marked "U. S. 380 B. M."-----	379. 75
Ringold School, 2.5 miles north of, 200 feet east of river road, at intersection of river road and road to east; spike in base of line pole, marked "U. S. 406 B. M."-----	405. 75
Hanford, 4.9 miles south of, on east side of river, 40 feet west of river road, 40 feet east of pumping plant on Pioneer ranch; iron post stamped "388 Wash 1913"-----	388. 273
Hanford, 3.6 miles south of, on east side of river, at intersection of river road with road from west, 15 feet east of road; spike in base of telephone pole, marked "U. S. 423 B. M."-----	422. 70
Pioneer ranch, 1.9 miles north of, at mouth of deep ravine, 15 feet west of road; spike in base of gate post, marked "U. S. 418 B. M."-----	418. 18
Hanford, 2 miles south of, 2,000 feet east of river, on line between secs. 32 and 33, near northwest corner of sec. 33, T. 13 N., R. 29 E., near corner of O. G. Hall's field, 150 feet west of present road, 30 feet north of fence corner; iron post stamped "438 Wash 1913"-----	438. 297
Hanford, 0.6 mile south of, 0.7 mile east of river, northwest corner fence post at private road intersection; spike in base, marked "U. S. 428 B. M."-----	427. 95
Hanford Ferry, 0.5 mile east of, at intersection of Ferry road with road up river, in southwest corner; spike in base of large fence post, marked "U. S. 421 B. M."-----	421. 31
T. 13 N., R. 28 E., SE. $\frac{1}{4}$ sec. 19, 1 mile east of and across river from Hanford, on top of high bluff, 550 feet above river, in line with main street of Hanford, 250 feet east of point where cliff breaks off sharp; iron post stamped "931 Wash 1913"-----	931. 276
T. 13 N., R. 28 E., southwest corner of sec. 18, near Bair's ranch house; spike in base of corner fence post, marked "U. S. 923 B. M."-----	923. 22

	Feet.
T. 13 N., R. 27 E., southwest corner of sec. 12; spike in base of corner fence post, marked "U. S. 890 B. M."-----	889. 73
T. 13 N., R. 27 E., northwest corner of sec. 12, 30 feet south of present fence corner; iron post stamped "840 Wash 1913"-----	839. 386
T. 13 N., R. 27 E., northeast corner of sec. 2; spike in base of large fence post, marked "U. S. 745 B. M."-----	745. 34
White Bluffs, 2.9 miles southeast of, 1.5 miles east of river, on west side of road; spike in base of gate post, marked "U. S. 700 B. M."-----	700. 15
T. 14 N., R. 27 E., probably southwest corner of sec. 26, 30 feet north by 30 feet east of corner of fence; iron post stamped "684 Wash 1913"-----	684. 149
White Bluffs, 1 mile southeast of, 0.6 mile east of river, at point where road east from Bluffs reaches top of hill, 300 feet south of homestead shack, fork of roads, one leading up river; spike in base of corner fence post, marked "U. S. 661 B. M."-----	660. 98
White Bluffs, southeast corner of Nelson and Almond streets; bench mark on telegraph pole (U. S. Engineers b. m.)-----	390. 19
White Bluffs, 225 feet northwest of saloon, on Walnut Street; wire pin bent over on top of 4-foot post (U. S. Engineers b. m.)-----	391. 16
White Bluffs, 3 miles up stream from, 0.3 mile east of edge of bluff, 5 feet south of present wagon road through sand dunes, witnessed by large loose granite boulder on west of road; iron post stamped "662 Wash 1913"-----	661. 366
T. 14 N., R. 27 E., northwest corner of sec. 9, 75 feet south of homestead shack; spike in base of post, marked "U. S. 678 B. M."-----	678. 21
Locke schoolhouse, 0.4 mile south of, in very large gate post; spike in base, marked "U. S. 660 B. M."-----	659. 49
Locke schoolhouse (District No. 84), 40 feet north by 30 feet east of school building, in yard, at northeast corner of sec. 6, T. 14 N., R. 27 E.; iron post stamped "674 Wash 1913"-----	674. 328

HAVEN QUADRANGLE.

[Latitude 46° 30'–46° 45'; longitude 119° 30'–119° 45']

From Locke School west along highways up left bank of Columbia River to Leslie's ranch.

Locke School, 1 mile west of, southeast corner of sec. 36, T. 15 N., R. 26 E., on north side of road; spike in base of large gate post, marked "U. S. 668 B. M."-----	667. 34
Wahluke, 1.8 miles down river from, at point where road reaches top of hill, 6 feet north of road; spike in base of mail-box post, marked "U. S. 661 B. M."-----	660. 64
T. 14 N., R. 26 E., southwest corner of sec. 2, 200 feet east of corner, 15 feet north of gate at private entrance to H. Glanzman's ranch; iron post stamped "441 Wash 1913"-----	440. 961
Wahluke, southeast corner of sec. 10, T. 14 N., R. 26 E., 10 feet west by 15 feet south of Koppen's ranch house, 200 feet north of river; iron post stamped "413" (U. S. Reclamation Service b. m.) (Engineers' elevation, 412.36)-----	412. 247
T. 14 N., R. 26 E., southeast corner of sec. 16; spike in base of corner fence post, marked "U. S. 407 B. M."-----	407. 26
Wahluke, 3.6 miles up river from, 200 feet north of river, 15 feet north of road, on top of boulder; point in circle of paint, marked "U. S. 403 B. M."-----	403. 29

	Feet.
Wahluke, 4 miles up river from, 300 feet north of river, 40 feet south of road, on slight rise 0.2 mile upstream from line of east-west fence, witnessed by pile of stone 1.5 feet high; iron post stamped "409 Wash 1913"-----	408.408
Coyote Rapids pumping station, across river and a little upstream from; nail in top of log, marked "408"-----	413.01
Haven, 1.2 miles downstream from, north of road; spike in base of gate post, marked "U. S. 404 B. M."-----	413.52
Haven, northeast corner of sec. 3, T. 13 N., R. 25 E., on south side of schoolhouse steps, on top step; aluminum tablet stamped "469 Wash 1913"-----	471.702
T. 13 N., R. 25 E., northwest corner of sec. 3, extreme head of irrigation ditch along pumping plant, on top of concrete wall on south side; chiseled square painted "U. S. 467 B. M."-----	470.28
Haven School, 2 miles west of, on river road, 200 feet north of river, on south side of road; spike in base of gate post of corral gate, marked "U. S. 417 B. M."-----	416.96
Leslie's ranch, 0.7 mile downstream from, opposite white house, 60 feet north of river, 20 feet south of road, on top of large boulder; point in circle of paint, marked "U. S. 413 B. M."-----	412.61
Leslie's ranch house, 700 feet east by 500 feet south of, in NW. $\frac{1}{4}$ sec. 5, T. 13 N., R. 25 E., near edge of river, in top of large basalt boulder; aluminum tablet stamped "407, also 406.610" (Reclamation Service b. m.)-----	406.209
Leslie's ranch, 0.3 mile up river from, 300 feet north of river, 40 feet south of road, in line of old fence; spike in base of post, marked "U. S. 418 B. M."-----	417.30

United States Engineers' bench marks.

Jaeger's ranch, right (south) bank of river, on northeast corner of sill of windmill (U. S. Engineers b. m.)-----	424.44
Hanford Irrigation and Pumping Co.'s pumping station; bench mark on door sill (U. S. Engineers' b. m.)-----	413.88
Wahluke, at southeast corner of sec. 10, T. 14 N., R. 16 E., 10 feet west by 15 feet south of Koppen's ranch house, 200 feet north of river (U. S. Reclamation Service b. m.) (Engineers' elevation 412.36)-----	412.247
Wahluke, across river from, in first bend of old wheel pumping plant, west of house; spike (U. S. Engineers' b. m.)-----	396.85

MITCHELL QUADRANGLE.

[Latitude 46° 30'–46° 45'; longitude 119° 45'–120°.]

From Leslie's ranch west and north along highways up left bank of Columbia River to Bend.

Leslie's ranch, 1.2 miles upstream from, 35 feet south of road, top of large basalt boulder; circle of paint marked "U. S. 415 B. M."-----	414.56
Richmond Ferry, 1.1 miles downstream from, 30 feet south of road, on river bottom, top of large boulder; circle of paint marked "U. S. 418 B. M."-----	417.48
Arrowsmith's ranch, in front of present residence; spike in base of power pole, marked "U. S. 467 B. M."-----	466.84

	Feet.
T. 13 N., R. 24 E., southeast corner of SW. $\frac{1}{4}$ sec. 2, 200 feet north by 80 feet west of pumping plant on Arrowsmith's ranch, in line of power poles; iron post stamped "467 Wash 1913"-----	466.827
T. 13 N., R. 24 E., northwest corner of sec. 10, at intersection of fence with power line; spike in base of power pole, marked "U. S. 452 B. M."-----	451.95
T. 13 N., R. 24 E., northwest corner of sec. 9, 100 feet east of fence corner; spike in base of power pole, marked "U. S. 465 B. M."---	464.97
T. 13 N., R. 24 E., quarter corner between secs. 5 and 8, in line with power poles, 3 feet north of nearest pole, west side of road; iron post stamped "463 Wash 1913"-----	462.604
Priest Rapids Power building, opposite and a little downstream from, at point where power line crosses Columbia River, 40 feet south of road; spike in base of fence post, marked "U. S. 437 B. M."-----	436.94
T. 14 N., R. 23 E., probably in sec. 35, 30 feet north of corner, in line of fence, 0.8 mile north of point where power line crosses river; iron post stamped "457 Wash 1913"-----	456.495
Figure 2 ranch, 1 mile south of main residence on, at deserted cabins, at south end of grove below hill, 40 feet west of lower road; spike in high gate post, marked "U. S. 464 B. M."-----	464.20
Figure 2 ranch, between present residence and shop; iron post (Reclamation Service b. m.) stamped 467 (engineers elevation 467.29)---	467.313
Figure 2 ranch, 1.3 miles north of, on small hump, 300 feet west of road; circle of paint on top of boulder, marked "U. S. 542 B. M."-----	541.32
D. N. Conrad's ranch, 1 mile south of, 100 feet east of road; circle of paint on top of large rock, marked "U. S. 533 B. M."-----	533.02
T. 14 N., R. 23 E., 400 feet east of northwest corner of sec. 10, 200 feet north of D. N. Conrad's ranch house, near gate post in line of fence; iron post stamped "523 Wash 1913"-----	522.683
Bend, 0.9 mile south of, 200 feet east of road; spike in base of power pole 183, marked "U. S. 513 B. M."-----	513.01
Bend, 100 feet south by 30 feet west of post office; spike in base of power pole No. 205, marked "U. S. 513 B. M."-----	513.17
Bend, southeast corner of sec. 28, T. 15 N., R. 23 E., east front of schoolhouse in second concrete step; aluminum tablet stamped "515 Wash 1913"-----	514.767

United States Engineers' bench marks.

Bend, U. S. Reclamation Service bench mark; iron post stamped "B. M. 503." (The description and Reclamation Service value are not known. Engineers' value 503.69)-----	503.67
Figure 2 ranch (Reclamation Service b. m.), iron post stamped "467" (Engineers' elevation 467.29)-----	467.313
Filey's ranch, in northwest corner of Filey's house; spike (U. S. Engineers' b. m.)-----	444.60
Filey's ranch, at upper end of small cove opposite, 500 feet south of street landing across river from Filey's house, 10 feet north of road on west bank of river; bench mark on solid rock (U. S. Engineers' b. m.)-----	425.51

Beverly, Ephrata, Malaga, Palisades, Quincy, Redrock, Trinidad, Wenatchee, Winchester, and Yakima quadrangles.

CHELAN, DOUGLAS, GRANT, AND KITTITAS COUNTIES.

The elevations in the following list were determined by primary leveling extended from the Coast and Geodetic Survey precise-level line at and near Ellensburg. Additional bench marks in this area established by the Reclamation Service are also included in this list.

The leveling was done as follows: Wenatchee quadrangle in 1898 by E. M. Fry, in 1903 by R. A. Farmer, and in 1909 by C. H. Semper; Palisades quadrangle in 1903 by Farmer; Trinidad quadrangle in 1903 by Farmer and in 1909 by Semper; Ephrata, Malaga, Winchester, and Quincy quadrangles by Farmer in 1903 and Semper in 1909; and Beverly, Redrock, and Yakima quadrangles in 1909 by Semper. Additional leveling in Malaga and Palisades quadrangles was done in 1911 by H. L. McDonald and in Beverly quadrangle in 1913 by D. S. Birkett.

The work since 1908 has been done in cooperation with the State, and the standard bench marks are stamped with the State name.

EPHRATA QUADRANGLE.

[Latitude 47° 15'–47° 30'; longitude 119° 30'–119° 45'.]

From Winchester northeast along Great Northern Ry. to milepost 1508.

	Feet.
Milepost 1605, 200 feet east of, south of track, in base of west post of emergency rail support; spike-----	1, 320. 03
Milepost 1603, 1,100 feet east of, 30 feet north of track, in top of boulder; aluminum tablet stamped "1261 T"-----	1, 262. 035
Milepost 1601, top of stake at foot of (railroad engineers' bench mark) -----	1, 246. 66
Ephrata, southwest corner of Mercantile Co.'s store, 6 feet west of; iron post stamped "1273 T"-----	1, 272. 715

From point 5 miles northwest of Moses Lake northwest along highway to Ephrata.

Moses Lake, 6.0 miles north of, 8 feet southwest of road, in 2 by 2 foot boulder 1 foot above ground; aluminum (?) tablet stamped "1274 T" (reported broken off, only the stem left)-----	1, 274. 199
Moses Lake, 6.0 miles north of, 4 miles south of Ephrata, 1,080 feet north of fork in road, 30 feet east of road, at telephone pole; iron post stamped "1275"-----	1, 275. 547

From Ephrata south along road 5 miles.

Ephrata, 3.7 miles south of, at curve in road to south, about half way uphill, 5 feet east of road, in top of large granite boulder; aluminum tablet-----	1, 283. 102
Ephrata, 4.9 miles south of, on west margin of road, on large rock; marked "U. S. B. M. 1270"-----	1, 270. 53

PALISADES QUADRANGLE.

[Latitude 47° 15'–47° 30'; longitude 119° 45'–120°.]

From Trinidad northeast and southeast along Northern Pacific Ry. to Crater.	Feet.
Willow Springs, southeast corner of water tank, in foundation; aluminum tablet stamped "1114 T"-----	1, 114. 383
Crater, 0.5 mile south of, opposite milepost 1620, 10 feet east of track; iron post stamped "1242 T"-----	1, 242. 600

From milepost 1635 on Great Northern Ry. near Columbia River east via highways to Moses Coulee, thence northeast along Great Northern Ry. to milepost 16 (part of a single unchecked spur line).

Moses Coulee, 2.8 miles north of, at milepost 8; iron post stamped "846"-----	846. 559
Moses Coulee, 3.8 miles north of, opposite milepost 9; copper nail in tie, marked "885"-----	864. 879
Appledale, 0.4 mile south of, 200 feet north of milepost 10, at private road crossing; copper nail in tie, painted "887"-----	886. 805
Appledale, 0.6 mile north of, at milepost 11; iron post stamped "896"-----	895. 740
Appledale, 1.6 miles north of, at milepost 12; copper nail in tie, painted "910"-----	910. 27
Appledale, 2.6 miles north of, 240 feet north of milepost 13; copper nail in tie, painted "933"-----	933. 213
Appledale, 3.5 miles north of, 175 feet south of milepost 14; iron post stamped "941"-----	940. 948
Palisades, north of station, at road crossing; copper nail in tie, painted "978"-----	978. 055
Palisades, 0.4 mile north of, at milepost 16; copper nail in tie, painted "984"-----	983. 939

WINCHESTER QUADRANGLE.

[Latitude 47°–47° 15'; longitude 119° 30'–119° 45'.]

From milepost 1612 east along Northern Pacific Ry. to Winchester.

Winchester, 1.5 miles west of, 5 feet east of milepost 1611; iron post stamped "1291 T"-----	1, 291. 707
Winchester, 20 feet south of track, opposite section house, in top of granite boulder; aluminum tablet stamped "1277 T"-----	1, 277. 333

From point 5 miles south of Ephrata south along highway to Morrison, thence west 3 miles, thence northwest to Winchester.

Ephrata, 6.3 miles south of, 30 feet east of road, 500 feet north of road to east, on top of large boulder; marked "U. S. □ B. M. 1241"-----	1, 241. 33
T. 20 N., R. 26 E., northwest corner of sec. 22; iron post-----	1, 243. 742
T. 20 N., R. 26 E., southwest corner of sec. 34; iron post-----	1, 246. 697
T. 19 N., R. 26 E., southwest corner of sec. 6; iron post-----	1, 215. 386
T. 20 N., R. 25 E., southwest corner of sec. 26; iron post-----	1, 214. 467
T. 20 N., R. 25 E., west quarter corner of sec. 22; iron post-----	1, 216. 061
Winchester, 20 feet south of track, opposite section house, in top of granite boulder; aluminum tablet stamped "1277"-----	1, 277. 333

From point 3 miles west of Morrison west along highway 6 miles.

Feet.

T. 19 N., R. 25 E., northwest corner of sec. 11, in corner fence post; spike marked "1156"-----	1, 156. 48
T. 19 N., R. 25 E., northwest corner of sec. 10; iron post-----	1, 212. 866
T. 19 N., R. 25 E., northwest corner of sec. 7; iron post-----	1, 201. 851

From Morrison south along highway 3 miles, thence west 5 miles, thence south 2 miles and west to southwest corner of T. 19 N., R. 25 E.

T. 19 N., R. 26 E., northwest corner of sec. 22; iron post-----	1, 226. 340
T. 19 N., R. 26 E., northwest corner of sec. 30; iron post-----	1, 160. 917
T. 19 N., R. 25 E., northwest corner of sec. 34; iron post-----	1, 184. 784
T. 19 N., R. 26 E., northwest corner of sec. 30; iron post-----	1, 160. 917
T. 19 N., R. 25 E., northeast corner of sec. 34; iron post-----	1, 184. 784
T. 19 N., R. 25 E., southeast corner of sec. 32; iron post-----	1, 166. 645
T. 19 N., R. 25 E., southwest corner of sec. 31; iron post stamped "1185 T"-----	1, 185. 687

From point 3 miles south of Morrison south along highway 8 miles.

T. 19 N., R. 26 E., southwest corner of sec. 34; iron post-----	1, 148. 217
T. 18 N., R. 26 E., northwest corner of sec. 22; iron post-----	1, 134. 240
T. 18 N., R. 26 E., near southeast corner of sec. 28, 20 feet west of road, on top of small hill; iron post-----	1, 142. 678

Reclamation Service bench mark.¹

Tps. 19 and 20 N., Rs. 24 and 25 E., at corner; iron post stamped "1206 T"-----	1, 206. 744
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QUINCY QUADRANGLE.

[Latitude 47°-47° 15'; longitude 119° 45'-120°.]

From Crater east along Northern Pacific Ry. to milepost 1612.

Milepost 1617, 5 feet east of; iron post stamped "1316 T"-----	1, 316. 958
Quincy station, opposite west end of station platform, south of track; iron post stamped "1301 T"-----	1, 301. 542

From Quincy south and east along highway toward Morrison.

Quincy, 1.3 miles west of, 5 feet east of milepost 1617; iron post stamped "1316 T"-----	1, 316. 958
Quincy, at southeast corner of Bank of Douglas County; iron post-----	1, 301. 912
Quincy, 5 miles south of, southeast corner of sec. 31, T. 20 N., R. 24 E.; iron post-----	1, 259. 839
T. 19 N., R. 24 E., northwest corner of sec. 10; iron post-----	1, 236. 276

From point 6 miles south of Quincy south along highway 5 miles, thence east to southwest corner of T. 19 N., R. 25 E.

T. 19 N., R. 24 E., northwest corner of sec. 20; iron post stamped "1236"-----	1, 236. 277
T. 19 N., R. 24 E., southwest corner of sec. 32; iron post-----	1, 213. 117
T. 19 N., R. 24 E., southwest corner of sec. 35; iron post stamped "1219"-----	1, 219. 575

¹ Levelling done in 1904 by Philo Holbrook, jr.

From southwest corner of sec. 32, T. 19 N., R. 24 E., south along highway
6 miles, thence east 2 miles.

	Feet.
T. 18 N., R. 24 E., southeast corner of sec. 18; iron post.....	1, 209.081
T. 18 N., R. 24 E., southwest corner of sec. 32; iron post.....	1, 323.569

REDROCK QUADRANGLE.

[Latitude 46° 45'–47°; longitude 119° 30'–119° 45'.]

From point 12 miles south of Morrison west along highway 9 miles.

T. 17 N., R. 26 E., southeast corner of sec. 4; iron post.....	1, 121.035
T. 17 N., R. 25 E., southeast corner of sec. 1; iron post.....	1, 132.713
T. 17 N., R. 25 E., northwest corner of sec. 10; iron post.....	1, 165.913
T. 17 N., R. 25 E., southwest corner of sec. 6; iron post.....	1, 209.68
T. 17 N., R. 25 E., SW. $\frac{1}{4}$ NW. $\frac{1}{4}$ sec. 7 (old bench mark not connected).....	1, 239.503

From point 12 miles south of Morrison along highways south 4.5 miles, thence
west to sec. 28, T. 17 N., R. 24 E.

T. 17 N., R. 26 E., southeast corner of sec. 4; iron post.....	1, 121.035
T. 17 N., R. 26 E., at center of quarter corners in sec. 22; iron post stamped "1279".....	1, 279.189
T. 17 N., R. 26 E., southeast corner of sec. 30; iron post stamped "1055".....	1, 055.544
T. 17 N., R. 25 E., northeast corner of sec. 34; iron post stamped "1115".....	1, 115.130
T. 17 N., R. 25 E., southeast corner of sec. 30; iron post stamped "1174".....	1, 174.603

From northwest corner of sec. 31, T. 17 N., R. 26 E., south along highway to
Redrock.

T. 16 N., R. 26 E., northeast corner of NW. $\frac{1}{4}$ sec. 6; iron post stamped "1024".....	1, 023.883
T. 16 N., R. 26 E., northwest corner of sec. 20; iron post stamped "666".....	666.38
Redrock, bridge over Crab Creek, south end, east side, in guard rail; spike; marked "U. S. $\square$ B. M. 540".....	540.71

From point 1.7 miles east of Colletta west along Chicago, Milwaukee & St. Paul
Ry. to Jericho.

Colletta, 1.7 miles east of, at east end of long rock side cut, 15 feet south of track; iron post stamped "667".....	667.028
Colletta, 0.6 mile east of, 6 feet north of track, opposite large hill of scab rock, on top of bowlder; marked "U. S. $\square$ B. M. 643".....	643.11
Colletta, in front of station sign; top of rail.....	629.7
Redrock, on Chicago, Milwaukee & St. Paul Ry., south of wagon bridge over Crab Creek, 300 feet east of creek, 35 feet north of track, at telegraph pole; iron post stamped "598".....	598.335
Smyrna, in front of station sign; top of rail.....	552.8
Smyrna, 1.1 miles west of, in sec. 28, T. 16 N., R. 25 E., 150 feet east of J. W. Hare house, 35 feet north of track; iron post stamped "536".....	536.706
Smyrna, 3.4 miles west of, at west end of trestle over Crab Creek, in north guard rail; top of bolt, marked "U. S. $\square$ B. M. 528".....	528.59
Smyrna, 4.6 miles west of, 1.0 mile east of Jericho, 30 feet north of track, 7 feet west of telegraph pole; iron post stamped "522".....	522.295
Jericho, in front of station sign; top of rail.....	526.1

From Smyrna southwest along highway to top of Saddle Mountain (checked spur).

Saddle Mountain, top of, on horse trail that leads up mountain from Smyrna (about 3 miles); iron post-----	Feet. 2, 431. 650
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Reclamation Service bench mark.¹

T. 17 N., R. 25 E., SW. $\frac{1}{4}$ NW. $\frac{1}{4}$ sec. 7, near range line on north slope of French Mountain; iron post stamped "1239 T"-----	1, 239. 553
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BEVERLY QUADRANGLE.

[Latitude 46° 45'–47°; longitude 119° 45'–120°.]

From southwest corner of sec. 32, T. 18 N., R. 24 E., south along highway to Beverly.

T. 18 N., R. 24 E., southwest corner of sec. 32; iron post-----	1, 323. 619
T. 17 N., R. 24 E., northwest corner of sec. 20; iron post-----	1, 326. 684
T. 17 N., R. 24 E., southwest corner of sec. 32; iron post-----	1, 072. 183
T. 16 N., R. 24 E., center of east side of SW. $\frac{1}{4}$ sec. 6, in fence post; spike marked "1210"-----	1, 210. 89
T. 16 N., R. 24 E., northwest corner of sec. 18; iron post-----	1, 174. 823

From southwest corner of sec. 34, T. 18 N., R. 24 E., south and east along highway to Low Gap, thence south and west to northwest corner of sec. 22, T. 17 N., R. 24 E.

T. 17 N., R. 24 E., southwest corner of sec. 2; iron post-----	1, 274. 470
T. 17 N., R. 25 E., southwest corner of sec. 6; iron post stamped "1209"-----	1, 209. 680
T. 17 N., R. 24 E., southwest corner of sec. 24; iron post stamped "1170"-----	1, 169. 952
T. 17 N., R. 24 E., southeast corner of sec. 28; iron post stamped "1076"-----	1, 076. 290

From Jericho west along Chicago, Milwaukee & St. Paul Ry. to Cohasset.

Jericho, 460 feet west of station sign, 8 feet north of track, in rock cut, top of rock; marked "U. S. $\square$ B. M. 527"-----	527. 41
Jericho, 2.0 miles west of, 170 feet west and north of cabin, 10 feet north of track; iron post stamped "528"-----	528. 604
Beverly, at Chicago, Milwaukee & St. Paul Ry. station, 20 feet west of water tank, 12 feet south of main track; iron post-----	546. 790
Beverly, at extreme west end of railroad trestle over Columbia River, top of bent, south side of track; railroad spike marked "561"-----	561. 81
Cohasset, 300 feet east of west end of sidetrack, 30 feet south of track; iron post-----	770. 117

From Bend north along road to Beverly.

Bend, 1.4 miles northeast of, 30 feet north of road; spike in base of corner fence post, marked "U. S. 519 B. M."-----	518. 80
T. 15 N., R. 23 E., 60 feet south of northwest corner of NE. $\frac{1}{4}$ sec. 22, in line of fence of Rush ranch, 300 feet west of ranch house; iron post stamped "515 Wash 1913"-----	515. 187

¹ Leveling done in 1904 by Philo Holbrook.

	Feet.
Beverly, 3 miles downstream from, on roadway cut in side of rock cliff, opposite and 0.8 mile downstream from concrete power house; point in circle of paint on solid rock, marked "U. S. 508 B. M."-----	508.90
Beverly, 1.7 miles south of, north approach to bridge over Crab Creek, east side and in top of concrete pier; aluminum tablet stamped "510 Wash 1913"-----	509.278
Beverly, at Chicago, Milwaukee & St. Paul Ry. station, 20 feet west of water tank, 12 feet south of main track; iron post stamped "546" (Engineers' elevation 546.87)-----	546.790

United States Engineers' bench mark.

Beverly, 1.7 miles south of, 300 feet north of mouth of Crab Creek, 150 feet west of Steal's house; spike in base of pile (U. S. Engineers' b. m.)-----	498.79
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WENATCHEE QUADRANGLE.

[Latitude 47° 15'-47° 30'; longitude 120° 15'-120° 30'.]

From point near Mission southeast along Great Northern Ry. to Malaga.

Wenatchee, in high school building, south side of east entrance, in brick wall 15 feet above ground; aluminum tablet stamped "802" (set and checked by Charles Hartman, jr., from b. m. at bank)-----	801.672
Wenatchee, 100 feet west of station, 150 feet east of water tank; iron post stamped "639 T"-----	639.485
Wenatchee, Columbia River Bank building, front of, 2 feet above sidewalk, 8 feet north of entrance door; aluminum tablet stamped "669 T"-----	669.589
Wenatchee, 3 miles east of, 300 feet east of milepost 1648, north of road crossing, at corner of fence; iron post stamped "649 T"-----	649.319

From Wenatchee north along State road up Columbia River to milepost 7.

Milepost 7, about 0.2 mile south of, 1,000 feet northwest of old lime works on west side of road; iron post stamped "738 T"-----	738.090
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From point in T. 22 N., R. 20 E., north to Malaga.

Summit, 12.9 miles north of, 0.4 mile south of Boland ranch, on east margin of road, on large rock; marked "U. S. $\square$ B. M. 789"-----	789.40
Summit, 13.7 miles north of, on road to Ellensburg, at corner of wire fence in front of W. R. Prowell ranch house; iron post stamped "783"-----	783.112
Malaga, 3.6 miles southeast of, on road to Ellensburg, east side of road, on large rock; marked " $\square$ 790"-----	789.62
Malaga, 2.4 miles southeast of, at gateway leading to G. G. Hager ranch house; iron post stamped "805"-----	805.225

From Wenatchee east along highway 3 miles.

Bridge over Wenatchee River, center of-----	690.3
Wenatchee, 1.2 miles east of, 800 feet northeast of east end of bridge over river, on road to north, on west side of large rock; top of rock marked "U. S. $\square$ B. M. 678"-----	678.59
Wenatchee, 2.5 miles northeast of, at northwest corner of H. J. Betty ranch (road turns east up canyon); iron post stamped "965"-----	965.900

TRINIDAD QUADRANGLE.

[Latitude 47°-47° 30'; longitude 120°-120° 30'.]

From point near southwest corner of T. 18 N., R. 30 E., north along highway toward Malaga.

	Feet.
Ellensburg, 12.7 miles northeast of, at crossroads, at northwest corner of R. B. Gage ranch; iron post stamped "2310"-----	2,309.850
Ellensburg, 16 miles northeast of, 3.2 miles north of R. B. Gage ranch house, 15 feet east of road, opposite wire fence corner; iron post stamped "3173"-----	3,172.595
Ellensburg, 19 miles northeast of, 0.4 mile north of first summit of mountain, 10 feet east of wire fence, 10 feet west of road; iron post stamped "4770"-----	4,770.255
Ellensburg, 22.3 miles northeast of, on top of mountain, 80 feet west of wire fence, 30 feet east of road; iron post stamped "5134"-----	5,133.874
Ellensburg, 23.6 miles northeast of, at summit of mountain, 10 feet west of road, in root of pine tree; spike marked "U. S. B. M. 5373" (tree 5 feet south of b. m. bears sign "Cable Ferry 13 miles")-----	5,372.80
Summit, 2.3 miles north of, in small grass draw, 30 feet west of road, 45 feet south of small clump of poplar brush; iron post stamped "4789"-----	4,788.605
Summit, 3.3 miles north of, on east side of road, in rocky clearing; top of rock, marked "U. S. ☐ B. M. 4213"-----	4,213.20
Top of loose stone monument, probably triangulation station-----	4,177
Summit, 4.6 miles north of, in canyon, at foot of steep grade (cut bank), south margin of road; iron post stamped "3443"-----	3,442.697
Summit, 5.6 miles north of, at foot of mountain where grain fields commence, center of road, in root of large pine stump; spike marked "U. S. B. M. 2953"-----	2,953.54
Summit, 7.4 miles north of, on Colocham Creek, in front of W. A. Haley ranch house, east side of road; large rock marked "U. S. ☐ B. M. 1882"-----	1,881.61
Summit, 7.8 miles north of, on Colocham Creek, opposite school-house, at west margin of fence; iron post stamped "1767"-----	1,766.938
Summit, 10.7 miles north of, on Colocham Creek, in front of E. N. Cook ranch, on east side of road; iron post stamped "971"-----	971.258

From milepost 1630 east along Northern Pacific Ry. to Trinidad.

Trinidad, 100 feet east of station; iron post stamped "958 T"-----	958.484
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MALAGA QUADRANGLE.

[Latitude 47° 15'-47° 30'; longitude 120°-120° 15'.]

From Malaga east along Great Northern Ry. to Hammond, thence south to milepost 1630.

Malaga, 6 feet southwest of milepost 1645; iron post stamped "651 T"-----	651.843
Iron bridge over Columbia River, 15 feet southwest of, 8 feet south of track, in solid rock; aluminum tablet stamped "677 T"-----	677.578
Rock Island, opposite station, 30 feet south of rock, 6 feet north of milepost 1639; iron post stamped "615 T"-----	615.267

	Feet.
Milepost 1635, 10 feet west of; iron post stamped "591 T"-----	591. 227
Columbia River station, opposite signpost; top of rail-----	606. 2
Moses Coulee, bridge over, 600 feet east of east end of, 30 feet south of track; iron post stamped "630 T"-----	630. 699
Milepost 1630, 40 feet southwest of; iron post stamped "782 T"-----	782. 630

From point 3 miles east of Wenatchee east and south to Rock Island.

Wenatchee, 6.0 miles east of, at Dave Horner ranch house, 3 feet from northeast corner of house; iron post stamped "1771"-----	1, 772. 014
Wenatchee, 7.0 miles east of, Fair View ranch, in road, 30 feet south of barn, at north line of wire fence; large rock marked "□ 1549"-----	1, 549. 95
T. 22 N., R. 21 E., sec. 14, at schoolhouse at three corners, road to south, northeast corner; iron post stamped "1162"-----	1, 162. 964
Wenatchee, 10.8 miles east of, junction of mail road with road to spring and road to river (four mail boxes), 30 feet south of road; large rock marked "□ 1190"-----	1, 190. 69
Rock Island, opposite station, 30 feet south of rock, 6 feet west of milepost 1639; iron post stamped "615 T"-----	615. 248

From point 2.6 miles north of Rock Island north along mail road up Badger Mountain (single spur line).

Rock Island, 4.7 miles north of, on mail road over Badger Mountain, at road to west leading to Mills ranch; iron post stamped "1844"-----	1, 844. 645
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From milepost 1635 on Great Northern Ry. near Columbia River east via highways to Moses Coulee, thence northeast along Great Northern Ry. to milepost 16 (part of a single unchecked spur line).

Columbia River, 1 mile north of, at milepost 1635 on Great Northern Ry.; iron post stamped "591"-----	591. 277
Columbia River, 1 mile east of, north side of county road; bowlder marked "833"-----	833. 55
Moses Coulee, 0.2 mile south of station, at milepost 5; iron post stamped "794"-----	794. 493
Moses Coulee, 0.6 mile north of, at road crossing; copper nail in tie, painted "806"-----	806. 16
Moses Coulee, 1 mile north of, at road crossing; copper nail in tie, painted "830"-----	830. 01
Moses Coulee, 1.8 miles north of, at milepost 7; copper nail in tie, painted "830"-----	830. 31

In sec. 11, T. 23 N., R. 21 E.

T. 23 N., R. 21 E., sec. 11, 155 feet west of road, 55 feet west by 6 feet south of fence corner; iron post stamped "3044"-----	3, 043. 729
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YAKIMA QUADRANGLE.

[Latitude 46° 30'—47°; longitude 120°—120° 30'.]

From Cohasset west along Chicago, Milwaukee & St. Paul Ry. to Boylston.

Beverly, 6.4 miles west of, 45 feet west of railroad crossing, 25 feet south of track; iron post-----	1, 248. 234
Beverly, 8.7 miles west of, 75 feet west of railroad crossing, 15 feet south of rail; iron post-----	1, 511. 75

18249°—Bull. 557—14—5

	Feet.
Rye, switch at west end of water tank, top of west front foundation timber of; spike driven vertically; marked "1755"-----	1,755.38
Rye, 1.3 miles west of, 250 feet west of trestle, 15 feet north of track, at east end of railroad cut; iron post stamped "1924"-----	1,923.942
Cheviot, in front of station sign; top of rail-----	2,164.5
Cheviot, 0.8 mile west of, at railroad overhead crossing of highway, 60 feet east of bridge, at telegraph pole; iron post stamped "2271"-----	2,271.210

From Boylston west along Chicago, Milwaukee & St. Paul Ry. to Ellensburg.

Boylston, at railroad crossing, at west end of tunnel, 40 feet south of track; iron post stamped "2446"-----	2,446.125
Boylston, 4.3 miles west of, 1,680 feet east of Renslow switch, west end of high trestle over wagon road, east end of cut, 7 feet south of track; iron post stamped "2050"-----	2,050.305
Boylston, 7.3 miles west of, at corner of wire fence, 200 feet north-east of small cabin, at margin of railroad right of way; iron post stamped "1777"-----	1,776.829
Kittitas, in front foundation pier of railroad water tank; aluminum tablet stamped "1646"-----	1,646.460
Kittitas, 3.4 miles west of, at railroad crossing, west side of road, 15 feet south of track; iron post stamped "1608"-----	1,607.974

From point 2 miles east of Ellensburg northeast along highway to point near southwest corner of T. 18 N., R. 20 E.

Ellensburg, 6.4 miles northeast of, at milepost 6, northwest corner of crossroads; iron post stamped "1836"-----	1,835.607
Ellensburg, 9.9 miles northeast of, at west corner of road to south; iron post stamped "2031"-----	2,031.503

Ellensburg and Mount Aix quadrangles.

KITTITAS, LEWIS, PIERCE, AND YAKIMA COUNTIES.

The elevations in the following list were determined by primary leveling extended from the double-rodged line along the Northern Pacific Ry., which was redetermined later by the precise-level party of the Coast and Geodetic Survey. Other elevations in the Ellensburg quadrangle are given in another list.

The leveling was done in the Ellensburg quadrangle in 1899 by H. K. Kalloch and in the Mount Aix quadrangle in 1900 by C. J. Hutchinson and in 1901 by Sidney Arnold.

ELLENSBURG QUADRANGLE.

[Latitude 46° 30'–47°; longitude 120° 30'–121°.]

From Ellensburg west along road through Manastash Canyon to T. 17 N., R. 16 E.

	Feet.
T. 17 N., R. 16 E., quarter corner on south side of sec. 10, 115 feet east of gate to schoolhouse, 5 feet south of fence, 22 feet west of fence corner; iron post stamped "1546 T"-----	1,546.648

Feet.

T. 17 N., R. 17 E., sec. 15, first ranch in Manastash Canyon, 350 feet southwest of house, 35 feet southwest of gate, 15 feet north of road; iron post stamped "2135 T"-----	2, 134. 890
T. 17 N., R. 16 E., sec. 13, 3 feet east of northeast corner of cabin, 165 feet west of section line, 30 feet south of edge of bench above south fork of Manastash Creek; iron post stamped "2731 T"-----	2, 731. 196

From Ellensburg southwest along road via Shushuskin Canyon to Wenas Creek, thence southeast down Wenas Creek to Selah station.

T. 17 N., R. 18 E., sec. 34, head of Shushuskin Canyon, 15 feet south of road, 25 feet east of junction with Durr road to Yakima; iron post stamped "2387 T"-----	2, 387. 339
T. 16 N., R. 18 E., northwest corner of sec. 6, 500 feet south of road, 16 feet southeast of fence corner; iron post stamped "2837 T"-----	2, 837. 284
T. 16 N., R. 17 E., sec. 5, summit of pass between Umptanum and Wenas creeks, 12 feet south of road; iron post stamped "3123 T"---	3, 123. 084
T. 16 N., R. 16 E., sec. 13, mouth of Kittitas Canyon, 1 foot north of fence, 8 feet south of 3.5-foot pine tree, 45 feet south of road forks, 500 feet southwest of junction of Ellensburg-Yakima road with road up Wenas Creek; iron post stamped "2266 T"-----	2, 266. 550
T. 16 N., R. 17 E., sec. 32, 65 feet north of east gate to barn of Burge's ranch, 500 feet southwest of house, 5 feet south of road, in small group of young trees; iron post stamped "2008 T"-----	2, 008. 589
T. 15 N., R. 17 E., sec. 3, 1,000 feet west of Chamberlain ranch, in top of flat rock shelf 15 feet south of road, in bend around point of hill; bronze tablet stamped "1883 T"-----	1, 883. 841
T. 15 N., R. 17 E., northeast corner of sec. 24, 90 feet south of bridge over branch of Wenas Creek, at road fork to North Yakima via Selah Valley, 2 feet north of fence and 15 feet south of Naches River road; iron post stamped "1622 T"-----	1, 622. 206
T. 14 N., R. 18 E., southwest corner of sec. 2, 25 feet east of old Durr road at junction with Wenas road and 50 feet north of main road, 3 feet south of fence, 450 feet west of Ruby house; iron post stamped "1318 T"-----	1, 318. 815

From Quinn's Road on Wenas Creek southwest across bridge to Naches River, thence southeast to North Yakima.

T. 14 N., R. 17 E., north side of sec. 2, summit of pass between Wenas Creek and Naches River, 25 feet southeast of road; iron post stamped "1917 T"-----	1, 917. 321
T. 14 N., R. 17 E., north side of sec. 11, 2 feet northeast of fence, 50 feet southwest of road, 345 feet northwest of lane leading past schoolhouse; iron post stamped "1502 T"-----	1, 502. 421
T. 14 N., R. 18 E., sec. 30, 1,000 feet north of schoolhouse, 5 feet west of junction of Naches road with lane, inside wire fence corner; iron post stamped "1331 T"-----	1, 331. 316
T. 13 N., R. 18 E., sec. 9, 300 feet north of schoolhouse at Cowiche Creek road crossing, 100 feet west of road, 60 feet east of irrigating ditch siphon, in top of boulder 5 by 9 feet; bronze tablet stamped "1180 T"-----	1, 181. 009

West' up south fork of Wenas Creek and southeast down Naches River to sec. 11,
T. 14 N., R. 17 E.

Feet.

T. 16 N., R. 15 E., about sec. 13 (unsurveyed), 2 miles east of summit of upper pass between Wenas Creek and Naches River, 30 feet south of road at east end of open flat between blazed pine trees each 12 feet distant; iron post stamped "3863 T"-----	3, 863. 676
T. 16 N., R. 15 E., about sec. 21 (unsurveyed), 3 feet southwest of northwest corner of dwelling house of Mehaffy ranch, at junction of Naches and Wenas roads, 0.8 mlie northwest of upper ford of Naches River; iron post stamped "2138 T"-----	2, 139. 242
T. 15 N., R. 15 E., northeast corner of sec. 13, 3 feet west of gate to Stevens house, Buckeye ranch, 2 feet south of fence, 10 feet north of road; iron post stamped "1855 T"-----	1, 855. 049
T. 15 N., R. 16 E., sec. 34, 125 feet north of house at west end of oak flat, F. V. Hansen ranch, east end of grade over hill, 75 feet south of cliff talus, in small point of outcropping ledge; bronze tablet stamped "1661 T"-----	1, 661. 304
T. 15 N., R. 17 E., sec. 31, inside fence at Lamberson ranch, 4 feet west of gate leading to house, 50 feet west of road crossing at Wapata ditch; iron post stamped "1568 T"-----	1, 568. 328

Southwest up Tieton River from mouth to T. 14 N., R. 15 E.

T. 14 N., R. 16 E., sec. 2, Timm ranch, 3 feet north of southeast corner of stone foundation of milk house; iron post stamped "1681 T"-----	1, 681. 729
T. 14 N., R. 15 E., about sec. 13 (unsurveyed), 0.8 mile west of Harper ranch, 1,000 feet west of west branch of dry watercourse from deep canyon to north, 60 feet north of cleared field and 600 feet north of Tieton River, 9 feet south of 25-foot outcropping point at base of high rock cliff; iron post stamped "1958 T"-----	1, 958. 904

From Naches River west up Cowiche Creek and east down Atahum Creek to Old Yakima.

T. 13 N., R. 17 E., sec. 8, 60 feet northeast of low point of divide between North and South forks of Cowiche Creek, outside of wire fence, 30 feet northwest of main road; iron post stamped "1570 T"-----	1, 570. 362
T. 14 N., R. 17 E., sec. 31, lane leading to Oak Grove creamery, 10 feet west of gate, 3 feet south of fence; iron post stamped "1824 T"-----	1, 823. 734
T. 14 N., R. 16 E., sec. 33, 675 feet east of mouth of McDaniel Canyon, 100 feet north of creek, 50 feet north of road, in face of outcropping lava formation at base of low basalt cliff; bronze tablet stamped "2204 T"-----	2, 204. 008
T. 13 N., R. 16 E., in northwest corner of sec. 18, 100 feet west of forks of main road with road to Louis Christensen ranch, 20 feet south of road and 3 feet north of branch road, at forks of South Fork of Cowiche Creek, on granite ledge; bronze tablet stamped "2632 T"-----	2, 631. 913
T. 13 N., R. 15 E., sec. 27, summit of pass between Cowiche and Atahum creeks, 0.8 mlie from Cowiche Creek, in shallow sag at head of draw, 0.8 mile above sawmill, blazed pines are east, south, and west; iron post stamped "3686 T"-----	3, 685. 485
T. 12 N., R. 15 E., sec. 2, opposite Hinckle ranch house, northeast side of road and 3 feet from fence, 300 feet southeast of Nasty Creek road crossing; iron post stamped "2463 T"-----	2, 462. 335

	Feet.
Tampico, sec. 18, T. 12 N., R. 16 E., 100 feet east of old store, at forks of road to north and south and at forks of Atanum Creek, south side of main road, 2 feet north of fence and 6 feet east of fence corner; iron post stamped "2127 T"-----	2, 116. 367
T. 12 N., R. 17 E., 930 feet east of west side of sec. 18, 30 feet north of road, 9 feet west of wire fence corner; iron post stamped "1703 T"-----	1, 692. 202
T. 12 N., R. 17 E., west side of sec. 10, 275 feet southeast of school-house, 3 feet inside corner of wire fence on northeast corner of crossroads; iron post stamped "1479 T"-----	1, 468. 725
T. 12 N., R. 18 E., west side of sec. 3, 600 feet southeast of school-house, 45 feet north of road, in jog of fence; iron post stamped "1066 T"-----	1, 066. 295

From Harper ranch west along Tieton River.

T. 14 N., R. 15 E., 6 miles west of Harper ranch, 40 feet west of creek, north of trail on left bank and 150 feet north of Tieton River, opposite a steeple rock about 75 feet wide and 250 feet high; iron post stamped "2236 T"-----	2, 237. 180
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Bench marks established by the United States Reclamation Service.

T. 13 N., Rs. 17 and 18 E., quarter corner between secs. 19 and 24, 8 miles west of North Yakima, 40 feet north of Cowiche telephone line, 20 feet north of Cowiche road, 3 feet north of fence corner and corner of Alvin Blair's homestead; iron post stamped "1354"-----	1, 354. 210
T. 14 N., R. 17 E., corner of secs. 20, 21, 28, and 29, 1.8 miles north of Cowiche post office, 300 feet northeast of Austin house, 800 feet west of Chambers house, 4 feet from northeast corner of fence, at angle in road; iron post stamped "1751"-----	1, 751. 197
T. 14 N., R. 16 E., 30 feet southwest of northeast corner of sec. 13, 20 feet west from range line, 10 feet west and 3 feet south of road at right-angle bend, 0.25 mile east of Louis Lanch house, 0.5 mile north of North Fork schoolhouse; iron post stamped "1971"-----	1, 971. 128
T. 14 N., R. 16 E., on line between secs. 10 and 11, 600 feet north of corner of secs. 10, 11, 14, and 15, 70 feet north of North Fork of Cowiche Creek, 800 feet east of house on French place, 30 feet north of road and fence corner, beside wire fence; iron post stamped "2183 T"-----	2, 183. 208
T. 14 N., R. 17 E., near center of sec. 8, 0.25 mile from small lake and reservoir, 800 feet southeast of Lake triangulation signal, 100 feet east of reservoir embankment, 80 feet southeast of Hill house, 3 feet inside southeast corner of fence; iron post stamped "1957 T"-----	1, 957. 111
T. 14 N., R. 17 E., 40 feet southeast of northwest corner of sec. 27, 30 feet east of fence corner, 2 feet north of fence; iron post stamped "1872 T"-----	1, 872. 163
T. 13 N., R. 17 E., 300 feet south of northeast corner of sec. 12, 2,000 feet southeast of triangulation signal Burlingame, 50 feet west of range line, 200 feet south of scab rock hill, 50 feet east of spur of scab rock leading from hill; iron post stamped "1731 T"-----	1, 731. 231

MOUNT AIX QUADRANGLE.

[Latitude 46° 30'—47°; longitude 121°—121° 30'.]

From east side of Tieton Basin west along Tieton River and Indian Creek to Cowlitz Pass.

Feet.

Tieton Basin, east side of, at ford, 40 feet south of Tieton River, in rocky ground between two pine trees; iron post stamped "2452 T"-----	2, 452. 536
South Fork of Tieton River, 200 feet east of, near mouth, on south side of trail to fork, 6 feet east of lone tamarack tree; iron post stamped "2785 T"-----	2, 785. 708
Russell ranch, 1,160 feet west of barn, 200 feet north of main trail to Cowlitz Pass, on hillside overlooking hay field, on top of irregular mass of outcropping basalt; bronze tablet stamped "2932 T"-----	2, 932. 491
Indian Creek, 4 miles above mouth, west of deep gorge of, on right side of trail on steep ascent to summit, west of small spring creek, on top of solid block of basalt; bronze tablet stamped "3719 T"-----	3, 719. 908
Cowlitz Pass, on south side of trail at forks, at base of small hill, west of small lake, on top of a mass of basalt rock about 6 by 6 by 3 feet; bronze tablet stamped "5191 T"-----	5, 191. 701

From Christensen ranch on Cowiche Creek to Summit between Cowiche Creek and Tieton River.

T. 13 N., R. 14 E., 400 feet west by 200 feet north of southeast corner of sec. 2, on top of extreme point of Cowiche Ridge overlooking Russell trail, Goose Egg Mountain, and Tieton Basin, in solid mass of basalt; bronze tablet stamped "5745 T"-----	5, 744. 993
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From Mehafeff ranch up Naches River and American River to Gold Hill.

Gold Creek, 100 feet east of crossing, 9 feet east of center of trail, in large flat rock; bronze tablet stamped "2437 T"-----	2, 437. 689
Bumping River, 800 feet above mouth of, 90 feet northeast from where Bumping River trail crosses Naches River, 10 feet north of trail, 80 feet north of north edge of Naches River; iron post stamped "2557 T"-----	2, 557. 386
American River, 2.5 miles northwest of mouth, 25 feet north of bank, 4 feet north of trail where it turns over hill, in flat rock 4 by 12.5 by 9.5 feet; bronze tablet stamped "2937 T"-----	2, 937. 114
Pleasant Prairie, 20 feet north of northeast corner of old cabin, 54 feet north of American River, 8 feet west of flag pole; iron post stamped "8337 T"-----	3, 337. 010
Bear Gap, summit of Cascade Mountains, 10 feet east of Buckley trail; iron post stamped "5882 T"-----	5, 882. 309
Bear Gap, 1.5 miles northwest of, 600 feet northwest of second creek crossing, 100 feet west of trail, in large rock; bronze tablet stamped "4518 T"-----	4, 518. 633

From mouth of American River to Bumping Lake.

Goose Prairie, northeast corner of cabin, 280 feet south of trail, 280 feet north of river, 500 feet east of "Old Man Fife" grave; iron post stamped "3285 T"-----	3, 285. 936
Bumping Lake, 120 feet northeast of lower northeast end of, at head of Bumping River, 10 feet north of trail, 30 feet north of old fence; iron post stamped "3407 T"-----	3, 407. 864

Chiwaukum, Mount Stuart, Skykomish, Snoqualmie, and Sultan quadrangles.

CHELAN, KING, KITTITAS, PIERCE, AND SNOHOMISH COUNTIES.

The elevations in the following list were determined by primary leveling extended from a double-rodged line along the Northern Pacific Ry., which was re-covered later by the precise-level party of the Coast and Geodetic Survey.

In Snoqualmie and Mount Stuart quadrangles additional elevations will be found in the list for the line along the Northern Pacific Ry.

The leveling was done as follows: Snoqualmie quadrangle in 1897 by Frank Cole, in 1898 by H. K. Kallock, in 1900 by C. J. Hutchison, and in 1910 by D. S. Birkett; Mount Stuart quadrangle in 1896 by Cole; Skykomish quadrangle in 1897 by G. N. Pratt and in 1898 by H. K. Kallock; Sultan quadrangle in 1898 by Kallock; and Chiwaukum quadrangle in 1898 by R. A. Farmer and Kallock, in 1900 by E. M. Fry, and in 1901 by C. E. Hill.

SULTAN QUADRANGLE.

[Latitude 47° 30'–48°; longitude 121° 30'–122°.]

At Index (on spur line from Peshastin).

	Feet.
Index, at station, 40 feet southwest of agent's window, 27 feet southwest of track; iron post stamped "532 T"-----	532.176
From Silverton south along trail over divide and down Williamson Creek to Sultan River (part of spur line).	
T. 29 N., R. 9 E., north bank of Sultan River, 50 feet east of north end of bridge over river, 600 feet east of mouth of Williamson Creek, in bed rock; copper bolt stamped "1413"-----	1,414.339

From Granite Falls south to Lake Roesiger.

Lake Roesiger, 100 feet east of Nesbeth barn, 150 feet east of trail, in bowlder; copper bolt stamped "619"-----	619.930
Lake Roesiger, surface of water-----	568

SKYKOMISH QUADRANGLE.

[Latitude 47° 30'–48°; longitude 121°–121° 30'.]

From Clealum along highway north to Fish Lake (part of spur line; elevations unreliable).

Fish Lake, at foot of; water level June 25, 1898-----	3,325.4
Fish Lake, in open meadow east of, 90 feet east of road, 105 feet north of small double log cabin, 125 feet west of edge of timber, in granite bowlder 6 by 7 by 9 feet; aluminum tablet stamped "3371 T"-----	3,372.708
Fish Lake, near head of; water level June 27, 1898-----	3,326.4

From Peshastin along Great Northern Ry. west to Index (part of spur line; elevations unreliable).

Cascade tunnel, 12.5 feet west of main track, 120 feet north of water tank, 780 feet north of main switch, 90 feet southwest of tool house; iron post stamped "3373 T"-----	3,373.835
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	Feet.
Cascade summit, 225 feet south of section house at, 13 feet west of main track in curve, 345 feet south of north switch of side track; iron post stamped "4061 T"-----	4,061.486
Wellington, 16 feet north of new station, 15 feet south of section house, 20 feet east of main track; iron post stamped "3114 T"-----	3,114.779
Madison, 75 feet southeast of roundhouse, 45 feet east of dwelling house, 18 feet south of main track, 280 feet west of east end of side track, 15 feet east of 26-inch stump; iron post stamped "2106 T"-----	2,106.488
Madison, 7 miles from, 5 miles from Skykomish, 9 feet east of track, in south end of small gravel pit, 600 feet south of signboard "Bridge 418 1 mile," 420 feet north of milepost 1734, iron post stamped "1389 T"-----	1,389.706
Skykomish, 80 feet west of station, 20 feet east of water tank, 15 feet south of main track; iron post stamped "930 T"-----	930.116
Salmon, 12 feet north of track, 130 feet east of switch at west end of sidetrack; iron post stamped "759 T"-----	759.716

From Index northeast along highway to Mineral City (part of spur line; elevation unreliable).

Galena, 6 feet southwest of corner of Silver Creek store, 12 feet east of road; iron post stamped "1110 T"-----	1,110.747
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From Monte Cristo northwest along Everett & Monte Cristo (Northern Pacific) Ry. to point near Silverton.

Monte Cristo station, 247 feet north of freight platform, 20 feet east of switchback, in large rock north of Everett & Monte Cristo Ry. trestle; copper bolt stamped "2772"-----	2,774.073
Bridge 51, 210 feet east of, 20 feet north of center of track, on 30-inch hemlock stump-----	2,510.154

CHIWAUKUM QUADRANGLE.

[Latitude 47° 30'–48°; longitude 120° 30'–121°.]

From Camas Creek north to Peshastin.

County road south side of Wenatchee River, at junction of Peshastin road, 5 feet north of road forks, 12 feet west of fence corner, 2 feet south of wire fence, 85 feet south of 14 by 20 foot log cabin; iron post stamped "1103 T"-----	1,103.771
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From Wenatchee northwest along Great Northern Ry. to Index (spur line; elevations unreliable).

Peshastin station, 65 feet southeast of wagon road, 75 feet southwest of track at road crossing and mail catch, 20 feet southeast of small board shack; iron post stamped "1045 T"-----	1,046.012
Peshastin, 2.3 miles west of, 6 feet north of track, 12 feet southwest of point of bluff at west end of sand-rock grading along Wenatchee road, 20 feet east of small ravine and filling; iron post stamped "1095 T"-----	1,096.028
Leavenworth, 120 feet southwest of station office, 5 feet southeast of platform, 3.5 feet southwest of low building; iron post stamped "1165 T"-----	1,165.593

	Feet.
Leavenworth, 2.6 miles from, 3,810 feet north of milepost 1876, 6 feet east of track, under low bank, 20 feet east of large bowlder; iron post stamped "1309 T"-----	1, 310. 003
"Big eddy" of Wenatchee River, east of, 4.5 feet west of track, 150 feet north of milepost 1879, at south end of cut around high rock point; iron post stamped "1556 T"-----	1, 556. 309
Leavenworth, 8.2 miles northwest of, 13.5 feet east of track, directly east of small island in Wenatchee River, 360 feet southeast of rocky point at track curve, 1,950 feet south of milepost 1882; iron post stamped "1647 T"-----	1, 647. 468
Chiwaukum, 40 feet south of corner of section house, 60 feet southeast of mail catch and switch, 40 feet northeast of track, 4 feet north of telegraph pole; iron post stamped "1814 T"-----	1, 815. 054
Chiwaukum divide (Little Summit), about 750 feet south of top of; top of east rail at road crossing and track sign-----	2, 084. 5
Chiwaukum summit, at north end of dirt cut at, 3.4 miles north of Chiwaukum, 19 feet east of track, 455 feet north of milepost 1887; iron post stamped "2083 T"-----	2, 083. 288
Nason Creek, 19 feet south of signpost, 975 feet east of switch at west end of sidetrack at, 13 feet north of track; iron post stamped "2162 T"-----	2, 162. 243
Merritt, 133 feet northwest of water tank, 15 feet southeast of 2.5-foot stump 6 feet from track, 11 feet southwest of main track; iron post stamped "2186 T"-----	2, 186. 306
Merritt, 3 miles west of, 11 feet southwest of track at cut around rock point, 1,530 feet west of trestle 384, 930 feet east of bridge 385; iron post stamped "2485 T"-----	2, 485. 840
Berne, 180 feet east of switch to spur, 7.5 feet south of main track, 225 feet west of water tank; iron post stamped "2918 T." (This bench mark was lowered 0.5 foot Dec. 13, 1904, by order of superintendent of railroad, as it interfered with and endangered lives of trainmen, and the elevation was corrected)-----	2, 918. 170
From mouth of Eagle Creek along highway and trail to summit of divide, thence west down Chumstick Canyon to Northup ranch.	
Bellvue ranch, 10 feet south of large gate at west entrance, 2 feet from fence, 10 feet south of road; iron post stamped "1360 T"-----	1, 360. 374
Smith ranch, 1,000 feet west of house, 50 feet west of large entrance gate, 200 feet southwest of barn; iron post stamped "1984 T"-----	1, 984. 591
Chumstick Canyon, on summit of divide between Eagle and Chumstick creeks, at root of pine tree; aluminum tablet stamped "3270 T"-----	3, 270. 904
Northwest up Strombergs Canyon to divide between Strawberry Creek and Wenatchee River (spur line; elevation unreliable).	
Strombergs Canyon, 0.1 mile east of summit, on north side of and 150 feet west from mouth of, in large bowlder; aluminum tablet stamped "1767 T"-----	1, 768. 133
From Chumstick schoolhouse, at mouth of Schoolhouse Canyon, west along old road to Chiwaukum.	
Chumstick schoolhouse, 800 feet east of, at forks of road; iron post stamped "1631 T"-----	1, 631. 897

	Feet.
Chumstick schoolhouse, 2 miles west of, at summit between Schoolhouse Canyon and Wenatchee River, at north side of road, in root of pine tree; nail.....	2, 116. 21
From Chiwaukum west up Chiwaukum Creek to Brown Bear mining camp (spur line; elevation unreliable).	
Brown Bear mine, 250 feet north of, 300 feet northwest of falls of Chiwaukum Creek, 10 feet north of trail, 100 feet north of creek; iron post stamped "2374 T".....	2, 374. 846
Up Chumstick, Little Chumstick, and Wenatchee rivers to Wenatchee Lake, thence south to Chiwaukum Summit.	
Chumstick Canyon, mouth of, 5 feet east of trail, 500 feet southeast of road, in top of stump; nail.....	1, 734. 52
Burgess ranch, 300 feet southwest of house at gate, 5 feet west of fence, 150 feet south of Beaver Creek bridge; iron post stamped "1882 T".....	1, 882. 20
Coal mines, 500 feet north of shaft house, 10 feet south of road, in root of pine tree; nail.....	2, 008. 99
Wenatchee Lake, 500 feet southeast of bank at foot of, at old steamer landing, 150 feet east of Wenatchee River, 150 feet north of old log shack; iron post stamped "1890 T".....	1, 880. 368
Wenatchee Lake, foot of, water level 8.30 a. m., Aug. 20, 1900.....	1, 870
From Martin north along highway to Snoqualmie Pass (spur line; elevations unreliable).	
Wenatchee Lake, 150 feet southwest of house on Bates ranch, 5 feet inside of fence, 50 feet from bank at head of lake; iron post stamped "1873 T".....	1, 874. 052
Bates ranch, 4.0 miles north of, 5 feet east of trail up White River, 300 feet north of third bend in river; iron post stamped "1905 T".....	1, 905. 923
From Leavenworth (Shugart ranch) north along highway and Chiwawa Creek trail to Buck Creek Pass (part of single spur line; elevations unreliable).	
Foster ranch, 300 feet northwest of house, 10 feet west of road to Lakeview mine, in root of pine tree; nail marked "2027".....	2, 027. 48
Deep Creek, 100 feet south of, in forks of Chiwawa Creek trail and road to Lakeview mine, in root of fir tree 1 foot east of trail; nail.....	2, 238. 88
Deep Creek, 100 feet south of, in forks of Chiwawa Creek trail and road to Lakeview mine, in root of fir tree 1 foot east of trail; nail.....	2, 238. 88
"2239 T".....	2, 239. 681
Cross Creek, 0.5 mile northwest of, 4 feet northeast of trail, in root of big fir tree; nail marked "2174".....	2, 175. 59
Alder Creek, 28 feet south of bridge over, 10 feet east of trail; iron post stamped "2137 T".....	2, 138. 777
Alder Creek, 2.0 miles northwest of, 1 foot south of trail, top of pointed rock about 2 feet high at summit of hill.....	2, 558. 60
Twin Creek, 8 feet north of, 2 feet west of trail, in root of black pine tree; nail marked "2348".....	2, 339. 12
Grouse Creek, 500 feet south of, 6 feet east of trail, in root of black pine tree; nail marked "2501".....	2, 492. 36
Chickman Creek, 70 feet southeast of trail crossing (ford), in base of large pine tree; nail.....	2, 429. 97

	Feet.
Chickman Creek, 60 feet southeast of trail crossing (ford), 12 feet northwest of large pine tree; iron post stamped "2438 T"-----	2, 429. 588
Chickman Creek, at trail crossing; surface of water Aug. 17, 1901----	2, 422. 9
Chickman Creek, 2.7 miles northwest of, 3 feet east of trail, 780 feet northwest of small stream, in root of tall pine tree; nail marked "2489"-----	2, 480. 81
Rock Creek, 1.0 mile southeast of, 3 feet west of trail, on rock 9 feet square and 6 feet high, in south face; bronze tablet stamped "2512 T"-----	2, 503. 652
Rock Creek, at trail crossing; surface of water August 23, 1901-----	2, 490. 1
Rock Creek, 1.3 miles northwest of, 8 feet west of trail, in root of big fir tree; nail marked "2502"-----	2, 493. 20
Rock Creek, 3.4 miles northwest of, 7 feet west of trail, 100 feet north of dry rocky creek bed, in root of spruce tree; nail marked "2578"-----	2, 569. 46

SNOQUALMIE QUADRANGLE.

[Latitude 47°-47° 30'; longitude 121°-121° 30'.]

From Clealum north along highway to Fish Lake (part of spur line; elevations unreliable).

Ronald, south side of sec. 7, T. 20 N., R. 15 E., northeast side of main street, at southeast corner of old Northern Pacific Coal Co.'s boarding house, 500 feet south of track; iron post stamped "2345 T"----	2, 346. 372
Clealum Lake, foot of, west side of sec. 2, T. 20 N., R. 14 E., 150 feet east of lake, just east of road and 20 feet from northwest corner of Lake View House; iron post stamped "2150 T"-----	2, 151. 622
Clealum Lake, foot of; water level May 24, 1898-----	2, 127. 9
Clealum Lake, head of, in highest point of large granite bowlder 15 feet from lake, 30 feet from road; aluminum tablet stamped "2140 T"-----	2, 141. 319
Morgan ranch, 200 feet east of, 15 feet west of road and 3 feet from fence; iron post stamped "2157 T"-----	2, 158. 587
Big Salmon La Sac, 10 feet west of road, 6 feet from edge of low river bench, 150 feet east of river; iron post stamped "2394 T"----	2, 395. 791
Clearing, containing 3 deserted cabins, on edge of and just east of road, in top of large bowlder with "U.S.M.M.No.2, Cle Elum Mining District" cut on west face; aluminum tablet stamped "2838 T"---	2, 839. 892
Bowlder Creek, 100 feet south of bridge over, 30 feet southeast of road, 12 feet northeast and 20 feet northwest from deserted log cabins, 50 feet southwest from 6 by 9 granite bowlder; iron post stamped "2895 T"-----	2, 896. 572
Camp Creek ford, 20 feet south of, 100 feet southeast of old log cabin, on bench east of road; iron post stamped "3086 T"-----	3, 087. 225
Fortune Creek, 30 feet north of north end of bridge over, 18 feet east of road; iron post stamped "3204 T"-----	3, 205. 096

From Easton north along highway to Lake Kachess (spur line; elevations unreliable).

Lake Kachess, at end of road 45 feet west of old cabin built of square logs, 50 feet from edge of lake and 675 feet north of boat-house; iron post stamped "2235"-----	2, 230. 530
Lake Kachess; surface of water Sept. 6, 1897-----	2, 222. 0

From Martin north along highway to Snoqualmie Pass (spur line; elevations unreliable).

	Feet.
Lake Keechelus, south end of, 40 feet north of wagon road, 120 feet south of old sawmill site at foot of lake, 500 feet southwest of ford at head of Yakima River, 20 feet south of bench mark is 3-foot hemlock tree blazed on three sides; iron post stamped "2479"-----	2, 475. 396
Gold Creek trail, directly opposite and 6 feet south of road, small burn east of bench mark; iron post stamped "2502"-----	2, 498. 510

From mouth of Bumping River north to Mathews Cabin (part of spur line; elevation unreliable).

Mathews cabin, 1.0 mile southeast of, at summit of road, on trail 0.5 mile northwest of where it leaves river; iron post stamped "3119 T"-----	3, 119. 068
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The United States Reclamation Service has established the following bench marks in the Snoqualmie quadrangle:

"A" line for control of Clealum dam site.

Clealum Lake, 8 miles from Clealum, 10 feet on right side of main road from Clealum to Fish Lake, directly in front of the Lake View House, 175 feet from lake; iron post stamped "2150 T" (p. b. m. No. 1)-----	2, 151. 622
Clealum Lake, near outlet of, 500 feet nearly east of house at present dam, 20 feet north of trail running east from said house, 250 feet due north of Clealum River at point 700 feet below dam (1905), some 30 feet southeast of dead fir tree blazed and marked "2192.435;" iron post stamped "2192" (p. b. m. No. 2)-----	2, 193. 807
Clealum Lake, 1,000 feet below outlet, on left bank directly above Government gaging station and 200 feet north of same, 20 feet north of trail leading south from house at outlet, on top of high ridge, 550 feet east of bench mark No. 2, two blazed pine trees are within 50 feet, marked "2248.886" and "2250.661," 120 feet above river gage; iron post stamped "2249" (p. b. m. No. 3)-----	2, 250. 853

"B" line for control of Kachess dam site.

Lake Kachess, at end of road, 45 feet west of old cabin built of square logs, 50 feet from edge of lake, 675 feet north of boathouse; iron post stamped "2235" (p. b. m. No. 1)-----	2, 230. 540
Lake Kachess, near outlet of, on east side of river, 300 feet southeast of crib dam, 200 feet east of house on road side, 10 feet west of station 2 (P. T. sheet No. 1, Kachess dam site); iron post stamped "2253" (p. b. m. No. 2)-----	2, 249. 077
Lake Kachess, near outlet of, on west side of river, 400 feet north of west from crib dam, 15 feet south of west from station 4 (P. T. sheet No. 1, Kachess dam site); iron post stamped "2250" (p. b. m. No. 3)-----	2, 245. 726

"C" line for control of Keechelus dam site.

Lake Keechelus, 30 feet west of public road, 68 feet east of lake, 450 feet south of Christopher Hansen's house, 500 feet south of outlet to lake; iron post stamped "2479" (p. b. m. No. 1)-----	2, 475. 461
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Feet.

Lake Keechelus, on ridge near outlet of, 205 feet north of timber dam on Yakima River, 190 feet east of public road, 500 feet east of lake; iron post stamped "2510" (p. b. m. No. 2)----- 2, 506. 175

The following bench marks were established in cooperation with the State in 1910 by D. S. Birkett in connection with leveling in the Cedar Lake quadrangle:

From Humpback Creek all (1 mile east of Rainy Creek) northeast along highway to Snoqualmie Pass, tying at that point with spur line northwest along highway from Martin.

Rockdale, 0.4 mile west of, west end of trestle FF 82 (being filled), 30 feet south of track, in base of 2-foot fir stump 3 feet high; copper nail in notch, aluminum tag stamped "2485"----- 2, 485. 76
 Rockdale, 8 feet north of track, in concrete abutment of water tank; aluminum tablet stamped "Prim. Trav. Sta. No. 11, 1910, 2508 Wash"----- 2, 508. 019
 Laconia, 200 feet west of station, in foundation of water tank at east end; copper nail, aluminum tag stamped "3003"----- 3, 003. 89
 Snoqualmie Pass, 8 feet south of road at summit, 0.25 mile west of small lake in marsh north of road; iron post stamped "3131" and "3127 Wash"----- 3, 127. 213

MOUNT STUART QUADRANGLE.

[Latitude 47°-47° 30'; longitude 120° 30'-121°.]

From Clealum northwest along Roslyn branch of Northern Pacific Ry. to Roslyn.

Roslyn, SE. $\frac{1}{4}$ sec. 17, T. 20 N., R. 15 E., 221.4 feet north of the center of north doorway of new brick power house at Roslyn Mines, in center of railroad track; iron post stamped "2222"----- 2, 218. 374

From Ellensburg northwest along highway to McCallum, thence west to Teanaway River, thence southwest to Teanaway.

Ellensburg, in front of station; top of rail----- 1, 510. 2
 T. 18 N., R. 18 E., 0.25 mile north of sec. 28, near fence post, just northwest of intersection of north-south road, 125 feet northeast of white schoolhouse; iron post stamped "1576"----- 1, 571. 002
 T. 18 N., R. 18 E., west of center of sec. 6, 0.8 mile southeast of road fork north to Green Canyon, 50 feet southwest of center of Dry Creek road; iron post stamped "1841"----- 1, 836. 276
 T. 19 N., R. 17 E., 550 feet west of northeast corner of sec. 16, divide between Dry Creek and Horse canyons, near road at summit, 22 feet north of north end of small bridge over an irrigation ditch; iron post stamped "2574"----- 2, 568. 469
 McCallum, about 900 feet south of northwest corner of sec. 27, T. 20 N., R. 17 E., about 20 feet southeast of center of intersection of road with Clealum road, 62 feet south by southwest from door of post office, just east of section line; iron post stamped "2178"----- 2, 173. 635
 T. 20 N., R. 16 E., southeast corner of sec. 24, Teanaway River road, in center of small triangle formed by roads, about 15 feet west of section corner on township line; iron post stamped "1991"----- 1, 986. 389

From McCallum north up Swauk Creek over divide and down Peshastin Creek.

	Feet.
Liberty post office, near center of sec. 10, T. 20 N., R. 17 E., 155 feet south of front door of post office, 95 feet southeast from southwest corner of new house; iron post stamped "2417"-----	2, 412. 047
Swauk and Peshastin creeks, divide between, 20 feet west of road; iron post stamped "4071"-----	4, 066. 345
Swauk-Peshastin divide, opposite first cabin north of, east side of road, about 3.8 miles south of Blewett, cabin is on opposite side of creek from road and four trees are blazed; iron post stamped "2784"-----	2, 779. 048
Blewett post office, 70 feet west of front door of, 125 feet from southeast corner of engine house of stamp mill; iron post stamped "2328"-----	2, 323. 166
Peshastin Creek, about 80 feet south of bridge over, 300 feet south of junction of Ingalls and Peshastin creeks, on east side of trail, trees blazed in vicinity; iron post stamped "1822"-----	1, 817. 356
Peshastin Creek, road down, junction with road from Camas, 25 feet southwest from, 125 feet southwest from southwest end of small bridge on main road; iron post stamped "1513"-----	1, 507. 966

From Peshastin Creek southeast up Camas Creek over divide and north down Brender Canyon to Mission.

T. 23 N., R. 18 E., unsurveyed, Robinson & Bluett's sawmill, 0.25 mile east of, 6 feet north of road at summit of divide between Brender Canyon and Camas Creek; iron post stamped "3029 T"---	3, 029. 719
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From Peshastin Creek west up Nigger Creek to divide.

Patterson's cabin, 25 feet north of, about 7 miles up the creek and near its head; iron post stamped "5769"-----	5, 763. 762
Falls and Cascade creeks, ridge between, running north from a high mountain just west of Nigger Creek and Falls Creek divide, about 300 feet south and 25 feet east of highest point of north end of ridge; iron post stamped "6257"-----	6, 251. 980

From Liberty northeast up Williams Creek road 4 miles.

T. 21 N., R. 18 E., sec. 31, unsurveyed, headwaters of Williams Creek, 20 feet east of intersection of last road and between two roads; iron post stamped "3403"-----	3, 397. 690
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North up Green Canyon road to Green Canyon.

T. 19 N., R. 18 E., W. $\frac{1}{2}$ sec. 31, 0.5 mile east of Green Canyon road, on first road running from Green Canyon road after leaving Dry Creek, on east side of small ravine; iron post stamped "1967"-----	1, 961. 580
T. 19 N., R. 18 E., W. $\frac{1}{2}$ sec. 7, at forks of road about 5 miles from Dry Creek, 30 feet east of intersection with road running west up a steep hill; iron post stamped "2649"-----	2, 644. 206
T. 20 N., R. 18 E., SW. $\frac{1}{4}$ sec. 31, unsurveyed, north end of road, about 150 feet west of house at end of road; iron post stamped "3049"---	3, 043. 856

From Thorp west up Taneum Creek.

T. 18 N., R. 17 E., near center of sec. 4, intersection of roads; iron post stamped "1837"-----	1, 831. 617
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Feet.

T. 18 N., R. 16 E., about 1,200 feet south-southwest from northeast corner of (unsurveyed), about 1,000 feet southwest of first house above Taneum Creek schoolhouse, on south side of creek, in a clump of small pines, house is on north bank of creek; iron post stamped "2046"----- 2, 041. 010

Northwest up Teanaway River and Middle Fork.

T. 20 N., R. 16 E., in SE. $\frac{1}{4}$ sec. 10, 15 feet west of junction of Teanaway River road with ranch road running west; iron post stamped "2127"----- 2, 122. 132

Teanaway River, Middle Fork of, about 2 miles above intersection with main fork, 10 feet north of wagon road, about 600 feet southeast from a two-story log house, the first one occupied above junction of forks, in edge of wood; iron post stamped "2333"----- 2, 328. 128

North up North Fork of Teanaway River.

T. 21 N., R. 16 E., sec. 32, unsurveyed, on North Fork of Teanaway River road, 10 feet west of junction with ranch road running northeast, 60 feet east of top of bluff above river; iron post stamped "2376"----- 2, 370. 936

Teanaway River, North Fork of, junction with Second Creek, 125 feet east by 40 feet south of, 2 miles above Beverly Creek, 5 feet west of trail; iron post stamped "3361"----- 3, 360. 482

Snow ranch, 8 miles above, opposite high rocky bluff between the upper forks of Teanaway River, on trail and 30 feet east of top of river bank, four trees blazed in vicinity; iron post stamped "4248"----- 4, 243. 214

From Clealum south 2 miles.

T. 19 N., R. 15 E., in NW. $\frac{1}{4}$ sec. 2, junction with road from Easton to Ellensburg, 68.5 feet west from southwest corner of large barn, 43.5 feet north of prominent fence corner; iron post stamped "2070"----- 2, 065. 587

Glacier Peak, Marblemount, Mount Baker, and Stilaguamish quadrangles.

SKAGIT, SNOHOMISH, AND WHATCOM COUNTIES.

The elevations in the following list were determined by primary leveling extended from tidal-gage bench marks established by the Coast and Geodetic Survey at Fairhaven and Tulalip.

The leveling was done as follows: Mount Baker quadrangle in 1898 by L. D. Ryus and G. C. Jacobs and in 1907 by H. M. Hadley; Marblemount quadrangle in 1898 by Ryus and in 1900 by E. M. Fry; Stilaguamish quadrangle in 1897 by G. H. Pratt and Fred Graff and in 1898 by Ryus; Glacier Peak quadrangle in 1897 by Pratt and John Graff and in 1898 by Ryus.

MOUNT BAKER QUADRANGLE.

[Latitude 48° 30'-49°; longitude 121° 30'-122°.]

From Kendall east along highway to Glacier.

Glacier, 1,400 feet north of station, 115 feet east of Glacier Creek bridge; iron post stamped "880 B"-----	Feet. 880. 725
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From Hamilton east along Great Northern Ry.

Hamilton, in front of station; top of rail-----	93. 9
Hamilton, 4 feet south of station and 5 feet east of southwest corner of platform; iron post stamped "96 T. U. L."-----	94. 719
Birdsview, about 3.0 miles west of, south of road at south end of gravel road, in 36-inch fir tree; nail-----	130. 95
Birdsview, about 1.0 mile west of, 40 feet west of bridge over Grandy Creek, south of road; iron post stamped "142 T. U. L."-----	141. 856
Baker, about 4.5 miles west of, on bench opposite orchard on river bank, north of road; in 16-inch fir tree; nail-----	210. 94
Baker, 0.25 mile west of, at bottom of hill, 40 feet north of fence corner, 50 feet north of road, in granite boulder; copper bolt stamped "231 T. U. L."-----	230. 506
McKutchen's, 0.25 mile east of, northeast side of foothill, 30 feet north on trail, in granite rock west of trail; copper bolt stamped "207 T. U. L."-----	206. 194

From Baker to Grasmere, thence north on west side of Baker River to Park Creek and to point 1 mile north of Swift Creek.

Baker, 0.25 mile west of, at bottom of hill, 40 feet north of fence corner, 50 feet north of road, in granite boulder; copper bolt stamped "231 T. U. L."-----	230. 506
Grasmere, road crossing, 0.6 mile north of, 2 feet east of road, in base of 18-inch fir tree; nail marked "570"-----	570. 58
Vogler Lake, 1.2 miles south of, 300 feet north of summit of hill, 150 feet south of old deserted cabin, 5 feet east of road, in 2 by 2 by 2 foot granite boulder; aluminum tablet stamped "1086"-----	1, 086. 653
Vogler Lake; surface of water June 19, 1908-----	1, 059. 5
Frank Edgar ranch, 300 feet north of house, 5 feet west of road, 60 feet south of corner of secs. 14, 15, 21, and 22, at foot of cedar snag, in granite boulder; aluminum tablet stamped "1085"-----	1, 084. 996
Small stream, 150 feet north of, at bend in trail, 2 feet east of trail, in base of 18-inch soft maple tree; nail marked "1075"-----	1, 075. 41
Sulphur Creek, 40 feet south of where creek is crossed by trail, at bend in trail, in base of 36-inch fir tree; nail and aluminum tag stamped "443"-----	443. 14
Sulphur Creek, 0.3 mile north of, at bend in trail, on top of bench on north side of creek, in base of 36-inch fir tree; nail marked "686." (Tree bears linen sign of south boundary of Washington Forest Reservation)-----	684. 22
Sulphur Creek, 1.2 miles north of, north of gully, on east edge of trail, in boulder; aluminum tablet stamped "743"-----	743. 283
Sulphur Creek, 2.6 miles north of, 0.2 mile north of deep draw, 8 feet west of trail, in base of 18-inch fir tree; nail marked "733"-----	732. 86

	Feet.
Friday Creek, 50 feet north of, at sharp bend in trail, in base of 36-inch tall dead cedar tree; nail marked "626"-----	625. 91
Boulder Creek bar, south edge of, west of trail, in boulder; aluminum tablet stamped "742"-----	742. 720
Park Creek, 0.9 mile south of, on south edge of small clearing, 200 feet south of abandoned cabin, 3 feet east of trail, in base of 36-inch fir tree; tree painted "748," nail and aluminum tag stamped "748"-----	747. 90
Park Creek, 20 feet south of foot bridge, at junction of trails, solid rock having 1 by 1.5 feet exposed; highest point marked "761"-----	761. 32
Morovitz ranch, 300 feet north of house, 100 feet north of small stream, 50 feet south of barn, in 6 by 4 by 3 foot boulder of igneous rock; aluminum tablet stamped "831" and rock painted-----	831. 064
Morovitz ranch, 0.7 mile north of, on open hillside, 50 feet north of small flat bench, 4 feet east of trail, small pile of rock behind bench mark rock, on embedded boulder; highest point marked erroneously "1101"-----	1, 001. 28
Morovitz ranch, 1.9 miles north of, at place where trail comes out upon Rainbow Creek bar, in root of 48-inch fir tree; nail marked "1207"-----	1, 207. 77
Swift Creek, west side of, foot bridge, 50 feet south of point where trail crosses, in large boulder; aluminum tablet stamped "1615"-----	1, 614. 805
Swift Creek bridge, 0.3 mile north of, east of trail, on 12 by 6 by 5 foot boulder of igneous rock; highest point marked "1694"-----	1, 694. 54
Swift Creek footbridge, 0.8 mile north of, on upper side of where trail after crossing big slide enters grove of trees, on large gray boulder; highest point marked "2000"-----	1, 999. 895

From Baker north by hatchery trail to Baker Lake, thence west to mouth of Park Creek.

Baker, 0.2 mile west of, at bottom of hill, 40 feet north of fence corner, 50 feet north of road, in granite boulder; copper bolt stamped "231 T. U. L."-----	230. 506
Baker, 2.5 miles north of, on summit of low ridge, 2 feet east of road, in knuckle of base of cedar tree; nail and aluminum tag stamped "279"-----	279. 38
Baker, 5 miles north of, at summit of stiff climb and at bend in trail, east of trail, on round granite boulder 12 inches in diameter; highest point marked "772"-----	772. 10
T. 36 N., R. 9 E., quarter corner of secs. 18 and 19, 7 feet northwest of, in base of 24-inch fir tree; nail and aluminum tag stamped "901"-----	901. 19
Board marked "Hatchery 10 miles," 100 feet south of, east of trail, in base of 48-inch tall dead cedar tree; nail and aluminum tag stamped "960"-----	960. 28
United States Fish Hatchery, Baker Lake, 20 feet north of cook house, in granite boulder 6 inches above surface of ground; aluminum tablet stamped "670"-----	670. 34
Baker Lake, northwest corner of, where trail starts to Morovitz ranch, 15 feet from lake, 10 feet south of trail, in base of 24-inch alder tree; nail marked "666"-----	666. 52

MARBLEMOUNT QUADRANGLE.

[Latitude 48° 30'–49°; longitude 121°–121° 30'.]

From Sauk City northeast along highway and trail to Panther Creek.

	Feet.
Kunde ranch, 400 feet north of bars to, on north side of road, in conglomerate granite rock 10 feet square, 5 feet high; copper bolt stamped "291 T. U. L."-----	291. 028
T. 35 N., R. 10 E., northeast corner of sec. 13-----	310. 50
Marblemount, 0.5 mile west of, 300 feet northeast of sec. 13, T. 35 N., R. 10 E., south of road, in 30-inch hemlock stump; nail-----	316. 76
Thornton ranch, 2.0 miles west of, 100 feet north of Skagit River, north side of trail, in large granite bluff; aluminum tablet stamped "425 T. U. L."-----	426. 548
Davis ranch, 3.0 miles west of, 50 feet south of Hanging Rock camping place, 100 feet north of Skagit River, in slanting rock wall; aluminum tablet stamped erroneously "842 T. U. L."-----	743. 376
Ruby Creek, mining camp at mouth of, 10 feet north of cook house, 20 feet east of blacksmith shop, in large boulder; aluminum tablet stamped erroneously "1372 T. U. L."-----	1, 274. 091
Panther Creek, at mouth of; surface of water-----	1, 644. 5

From Marblemount east along highway 16 miles.¹

Marblemount, junction of main road and Ruby Creek trail, 200 feet west of hotel, in 42-inch fir stump; nail-----	322. 37
Skagit River at ferry; surface of water-----	300. 4
Marblemount post office, 10 feet west of blacksmith shop, 60 feet east of river, in 54-inch cedar stump; nail-----	312. 43
Marblemount, 2.1 miles east of, 50 feet north of road, 200 feet east of gravel slide, in granite rock 7 feet square, 4 feet high; copper bolt stamped "410 T. U. L."-----	409. 303
Marblemount, 7.0 miles east of, 200 feet east of bridge over gulch, south of road, in 36-inch fir tree; nail-----	801. 04
Marble Creek at ford; surface of water-----	977. 9
Marblemount, 11 miles east of, west end of corduroy road and 4 feet above fork road to north, in 42-inch cedar stump; nail-----	1, 030. 31
Hurd house, 150 feet north of, in granite rock 4 feet high, 10 feet north of road; copper bolt stamped "1057 T. U. L."-----	1, 055. 35
Marblemount, 14 miles east of, 30 feet east of small bridge, south of road, in 54-inch cedar tree; nail-----	1, 047. 02
Marblemount, 16 miles east of, 50 feet above river, south of trail, in 36-inch cedar tree; nail-----	1, 202. 86

STILAGUAMISH QUADRANGLE.

[Latitude 48°–48° 30'; longitude 121° 30'–122°.]

From Hartford Junction northeast along Northern Pacific Ry. to Granite Falls, thence northwest along highway to Arlington.

Granite Falls, 600 feet west of station, south side of track and north of wagon road, in V formed by road and track, crossing; iron post stamped "Prim. Trav. Sta. No. 6, 386, Wash., 1909"-----	385. 120
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¹ This line closes 3 feet low and is unadjusted.

From point near Silverton along Everett & Monte Cristo (Northern Pacific) Ry.
and down Sauk River to Granite Falls.

	Feet.
Bridge 42, Perry Creek, 120 feet west of, on south side of track; on 24-inch hemlock stump-----	1, 748. 28
Bridge 37, 25 feet east of west end of, on larch stump 36 inches in diameter-----	1, 845. 92
South Fork of Stilaguamish River, bed of, opposite bridge 37-----	1, 630
Milepost 30, 670 feet west of, 15 feet south of track, on 4-foot hemlock stump-----	1, 574. 34
Forty-five Mining Co.'s ore house, 450 feet east of, 15 feet north of center of track; on 5-foot cedar stump-----	1, 478. 14
Silverton, 1,000 feet east of water tank, 210 feet east of milepost 29, 20 feet north of track, in granite boulder 6 by 6 by 6 feet; copper bolt stamped "1521"-----	1, 522. 84
Milepost 28, about 1,800 feet west of, south side of track, on hemlock stump 36 inches in diameter-----	1, 437. 10
Milepost 27, about 1,850 feet west of, on north side of track, on hemlock 36 inches in diameter-----	1, 385. 13
Stilaguamish River, third crossing of, 210 feet west of bridge 30, south of track, on spruce stump 4 feet in diameter-----	1, 281. 22
Boardman Creek, about 2,200 feet east of west end of bridge 29 over, in T. 30 N., R. 9 E., probably sec. 20, 40 feet south of railroad, on west end of ledge which rises some 40 feet above track, bench mark is 4 feet higher than track; copper bolt stamped "1247"-----	1, 248. 483
Mud tunnel, 400 feet northwest of west end of, 20 feet west of track, on hemlock 36 inches in diameter-----	1, 179. 04
Bridge 23, 120 feet west of, south side of track, on hemlock stump 18 inches in diameter-----	1, 063. 99
Bridge 19, 1,050 feet west of, north side of track, on hemlock stump 18 inches in diameter-----	945. 83
Bridge 17, 250 feet west of, in T. 30 N., R. 8 E., about 400 feet east of section line between secs. 7 and 8, 15 feet south of Everett & Monte Cristo Ry. track, in a 6-foot cut; copper bolt in slate rock stamped "897"-----	898. 584
Bridge 15, 250 feet east of, 20 feet south of track, on hemlock stump 4 feet in diameter-----	866. 90
Tunnel 5, east portal of; top of rail-----	787. 3
Tunnel 4, east portal of; top of south rail-----	764. 6
Tunnel 3, east portal of; top of south rail-----	745. 1
Tunnel 2, west portal of; top of tie at-----	621. 5
Stilaguamish River, road down, junction with Sauk River road, 58	
Tunnel 2, 600 feet west of, north of track, on 24-inch fir stump-----	605. 4
Milepost 9, 20 feet west of, on opposite side of track from, in side of solid rock cut about the middle of 10°-curve to the right, 10 feet south of center of track; copper bolt stamped "460"-----	461. 031
Blackman spur, 470 feet west of headblock, 15 feet north of track, on hemlock stump 30 inches in diameter-----	440. 17
Granite Falls, 350 feet west of station, 40 feet south of track, on first ridge west of station; iron post stamped "397"-----	397. 806

From Silverton south along trail over divide to Williamson Creek, thence down creek to Sultan River.

Forty-five Mining Co.'s tram, 40 feet south of the fifth mast, on hemlock stump 36 inches in diameter, beside trail-----	1, 877. 05
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Feet.

Forty-five Mining Co.'s tram, 40 feet southwest of the ninth mast, on larch stump 24 inches in diameter, on trail-----	2, 361. 53
First loop in trail cut out of solid rock, 50 feet below, 50 feet below tram, 10 feet below trail, on hemlock stump 20 inches in diameter--	2, 330. 44
Second loop in trail cut out of solid rock, on hemlock tree 20 inches in diameter, where trail begins to descend-----	3, 377. 32
Michigan Gulch, 25 yards south of tram, 10 feet north of trail, on larch tree 36 inches in diameter-----	3, 573. 42
Summit, 5 feet west of mast on tram, on larch stump 36 inches in diameter-----	4, 177. 07
Summit, about 0.5 mile south of, on south side of trail, on larch tree 30 inches in diameter-----	3, 514. 59
Adelaide Gulch, near intersection of two small streams, on south side of trail, on hemlock 12 inches in diameter-----	3, 019. 13
Forty-five Mining Co.'s sawmill, 80 feet east of, on larch stump above skid road-----	2, 582. 97
Williamson Creek, intersection of trail with right bank of, on larch tree 24 inches in diameter-----	1, 903. 89
Log cabin, 850 feet south of, on east side of trail, on larch tree 36 inches in diameter-----	1, 813. 05
T. 29 N., R. 10 E., probably in sec. 7, 200 feet south of small creek, in detached rock 10 by 10 by 5 feet; copper bolt stamped "1688"---	1, 689. 93

From Granite Falls southeast along highway to Lake Roesiger.

Granite Falls, 350 feet west of station, 40 feet south of track, on first ridge of solid land west of station; iron post stamped "397"-----	397. 806
Granite Falls, 1,200 feet east of, on 18-inch fir tree on right of road---	398. 12
Kerren's, across bridge opposite, 5-foot cedar stump, left of road-----	440. 57
Wetmore's slashing, 1,000 feet south of, right side of road, on root of cedar stump-----	511. 87
Swamp, 150 feet beyond bridge over, left of road; on 18-inch hemlock tree-----	497. 31
Menzel Lake, opposite middle of, on hemlock stump, right of road-----	505. 75
Henry Menzel house, on 2-foot hemlock stump opposite, left of road---	540. 58
Chowndings, 1,250 feet north of, in clearing, on 18-inch hemlock tree, left of road-----	461. 80
Barstow house, 40 feet north of, near trail cutting across to Lake Roesiger wagon road, on 18-inch hemlock stump-----	524. 30
Barstow house, 1,000 feet southeast of, on 3-foot hemlock tree, left of trail-----	639. 04
Lake Roesiger road, 800 feet south of house, on 12-inch hemlock left of road-----	733. 49

From Chowndings along highway to Kelley ranch.

Chowndings, 1,500 feet beyond, on 24-inch hemlock tree left of road---	486. 75
Schoolhouse, 800 feet beyond, on 30-inch hemlock stump right of road---	491. 42
Russell house, 500 feet west of, on 24-inch hemlock stump right of road-----	504. 95
Law house, 1,200 feet west of, on 36-inch hemlock stump right of road-----	549. 92
Crow house, 100 feet north of, on 36-inch hemlock stump in Crow's field-----	562

	Feet.
Summit of divide, on 5-foot cedar snag on right of trail.....	740. 32
Feemster house, 200 feet northwest of, on 5-foot cedar tree left of trail.....	689. 83
Kelley house, 1,200 feet west of, on 36-inch cedar tree near creek right of trail.....	664. 93
Kelley house, 1,250 feet east of, on 18-inch hemlock tree 15 feet left of trail.....	708. 43
Kelley house, 1,750 feet east of, on boulder on side of hill, 25 feet to left of trail, 275 feet from Pilchuck River; copper bolt stamped "746".....	747. 500

From Granite Falls northeast along highway to Canyon Creek.

Granite Falls, 0.5 mile northeast of, northwest side of road, 8 feet from fence, 75 feet from gate to house, in twin fir stump; nail.....	440. 27
Granite Falls, 1.0 mile northeast of, east of road at curve, in 76-inch cedar stump 10 feet high; nail.....	454. 24
Granite Falls, 1.5 miles northeast of, east side of road at bend, in very prominent 20-inch hemlock tree; nail.....	388. 25
Stilaguamish River, South Fork, 100 feet southwest of bridge over, northwest side of road, in 20-inch hemlock tree; nail.....	362. 73
Stilaguamish River, South Fork, 0.5 mile northeast of, southeast side of road, in 20-inch fir stump 4 feet high; nail.....	460. 68
Stilaguamish River, South Fork, 1.0 mile northeast of, northwest of road, top of ridge, in 24-inch hemlock tree; nail.....	568. 47
Canyon Creek, trail to footbridge, at junction with road.....	523. 9
Stilaguamish River, South Fork, 1.25 miles northeast of bridge over, 150 feet from Canyon Creek, north of road on hillside, in 36-inch fir tree; nail.....	446. 35
Canyon Creek, at mouth of small stream from north, 150 feet west of house.....	430. 52
Canyon Creek, 0.25 mile north of, east side of trail, on first bench, in 34-inch fir stump; nail.....	479. 16
T. 31 N., R. 7 E., south quarter corner of sec. 32, 125 feet northeast of, in rock projecting 2.5 feet out of hill; copper bolt stamped "545 M. C.".....	547. 725

From Barlow Pass along highway down Sauk River to Darrington, thence west along Northern Pacific Ry. to bridge over Stilaguamish River.

Raucher cabin, 600 feet north of, T. 31 N., R. 10 E., 0.5 mile southeast of meander corner between secs. 4 and 9, on west of road, on cedar tree 18 inches in diameter.....	732. 59
Meander corner between secs. 4 and 9, 300 feet (along road) north of, T. 31 N., R. 10 E., on west side of road, about 40 feet from river, in cedar tree 12 inches in diameter.....	710. 98
Milepost 12, about 1,000 feet south of, 150 feet north of bench of land 20 feet higher than bench mark, on west of road, on 30-inch hemlock tree.....	689. 56
Milepost 11, about 1,800 feet southeast of, 100 feet north of short ascent 12 feet high to bench of land, 30 feet from river bank, on cottonwood 28 inches in diameter, on west of road.....	662. 05
Milepost 11, about 250 feet northwest of, 200 feet (along road) north of log cabin, on fir tree 24 inches in diameter, west of road.....	646. 35

	Feet.
Clear Creek, 50 feet east of, at point about 150 feet above its mouth, 50 feet south of a log cabin, in ledge on south of road; copper bolt stamped "625"-----	626. 940
Clear Creek, about 4,500 feet northwest of, about 1,200 feet (along road) north of first clearing north of Clear Creek, on cedar tree 30 inches in diameter on east of road-----	593. 57
Milepost 8, about 1,500 feet north of, on 12-inch fir tree on west of road-----	575. 87
Emmons house, 100 feet northwest of, at junction of road down Sauk River with road to Darrington post office, on fir tree 18 inches in diameter-----	566. 92
Stilaguamish River, road down, junction with Sauk River road, 58 feet west of Sauk River road and 20 feet south of Stilaguamish road, in fir tree 28 inches in diameter; nail-----	556. 88
Stilaguamish River, road down, junction with Sauk River road, 0.25 mile west of, north of road, on cedar tree 8 inches in diameter-----	545. 28
Milepost 6, 500 feet west of, 140 feet west of point where road makes a sharp turn to west, on hemlock tree 15 inches in diameter-----	532. 25
Darrington "burn," on west side of, sec. 9, T. 32 N., R. 9 E., 10 feet north of trail, halfway down the slope between bench and bottom land, slope faces south, a log barn on Squire Creek bottom bears south-southeast about 600 feet distant, in granite boulder 3.5 by 2.5 feet and 1 foot above ground; copper bolt stamped "496"-----	498. 161
James Smith ranch, by bars across trail leading to, 150 feet west of Squire Creek; on cedar tree 8 inches in diameter-----	456. 88
W. Spoerhase ranch, opposite gate entrance to, on 36-inch cedar tree. T. 32 N., R. 8 E., secs. 12 and 13, 100 feet west of quarter corner between, north side of trail, on hemlock tree 20 inches in diameter---	454. 69
T. 32 N., R. 9 E., 20 feet northwest of corner to secs. 11, 12, 13, and 14, on cedar tree 18 inches in diameter, which is the northwest bearing tree of corner-----	454. 66
Cavanaugh's trail, point of branching, on cedar stump 18 inches in diameter on north side of trail-----	467. 06
Boulder Creek, top of descent toward, 80 feet east of, on west edge of bench, on hemlock tree 14 inches in diameter-----	429. 69
Joe Pott's clearing, sec. 8, T. 32 N., R. 8 E., on trail to, and about 700 or 800 feet southwest of cabin, about 2,000 feet northerly from main trail down Stilaguamish River, on south side of dry water-course bearing east and west; in rock 3.5 by 2.5 feet and 1.5 feet above ground; copper bolt stamped "303"-----	412. 00
T. 32 N., R. 8 E., quarter corner between secs. 7 and 8, 150 feet west of creek in ravine, south of trail, on cedar tree 4 feet in diameter---	305. 328
Milepost 1, 40 feet west of, north side of trail; on 4-foot cedar tree---	374. 14
T. 32 N., R. 7 E., quarter corner between secs. 11 and 12, about 0.5 mile east on left bank of North Fork of Stilaguamish River, on south side of trail, top of low bluff; on cedar tree 36 inches in diameter-----	371. 79
T. 32 N., R. 7 E., about 600 feet southeast of quarter section corner between secs. 11 and 12, 15 feet north of abandoned road which branches off from the new wagon road about 200 feet northeast, in slashing 30 feet north of steep descent to North Fork of Stilaguamish River about 50 feet below, on north slope of rock 6.5 feet long and 2.5 feet wide, roof-shaped; copper bolt stamped "286"---	299. 90
	288. 100

	Feet.
N. C. Hollingsworth house, about 1.9 miles west of, 40 feet east of junction of old and new roads, north side of road, in root of 24-inch cottonwood tree; nail.....	206. 14
Four-mile post, about 300 feet east of, top of hill, on north side of road, in 20-inch fir tree; nail.....	274. 21

From Darrington north along highway to McKutchens.

Darrington, 4 miles north of, east of road, opposite bars, in 36-inch cedar tree; nail.....	478. 61
Darrington, 5 miles north of, on west side of road at top of hill, in fir tree; nail.....	455. 29
Darrington, 7.5 miles north of, 200 feet north of corduroy bridge over swamp, on east side of road, in 42-inch cedar tree; nail.....	397. 77
Suiattle River, 0.25 mile south of mouth of, 8.5 miles north of Darrington, in ledge of granite and slate 15 feet above and 15 feet west of road, in cut of hill; copper bolt stamped "414 M. C.".....	415. 813
Darrington, 14.5 miles north of, 10 feet west of road and south of west of island in Sauk River, in rocky bluff 10 feet high, 40 feet above river; copper bolt stamped "333 M. C.".....	335. 358
Darrington, 18.5 miles north of, south edge of clearing, 200 feet north-east of barn, east of road, in cottonwood tree; nail.....	258. 86
Sauk, 3.5 miles south of, 50 feet from northeast corner of Phillips's fence, 50 feet from slough, west of road, in 80-inch charred cedar tree; nail.....	251. 00
Sauk, 2.0 miles south of, north of gate of fork roads to east, about 1,000 feet northwest of bridge over small stream, in sandstone ledge 12 feet west of road; copper bolt stamped "248 M. C.".....	247. 949
Skagit River, Sauk Ferry, about mean height of river.....	202. 2

From McMurray east along highway and trail to Lake Cavanaugh, thence north via Day Lake to Lyman Ferry (part of line).

Deer Creek trail, 5 miles from Lake Cavanaugh road, 3 feet south of southwest corner of reflectors, 4 feet north of trail; iron post stamped "1260 Wash 1909".....	1, 260. 590
T. 33 N., Rs. 6 and 7 E., quarter corner between secs. 12 and 7, crossing of range line and Deer Creek trail, in root of tree; copper temporary bench mark.....	1, 294. 19
Deer Creek trail, 100 feet west of junction of trail to Day Lake, 7.2 miles from Lake Cavanaugh Road, 15 feet east of stream, 6 feet west of 8-foot cedar tree, in top of large boulder; aluminum tablet stamped "1147 Wash 1909".....	1, 146. 497
Deer Creek trail, 0.2 mile north of, on trail to Day Lake, 43 paces east to corner of secs. 5, 6, 7, and 8, east side of trail, in root of tree blazed and marked with pencil "43 paces east to cor. secs. 5, 6, 7, and 8"; copper temporary bench mark.....	1, 471. 87
Tps. 33 and 34 N., R. 7 E., 60 rods east of corner of secs. 5, 6, 31, and 32, crossing of township line and trail from Deer Creek to Day Lake, east edge of trail, in 8-inch tree blazed and marked with pencil; copper temporary bench mark.....	1, 710. 38
Day Lake, east end of, fork of trail, in tree blazed and marked in pencil "Deer Creek, keep to right"; copper temporary bench mark.....	1, 627. 21
Day Lake, surface of water.....	1, 599. 55

Feet.

Day Lake, north side of, about one-third of the distance from east to west end, 250 feet west of cabin, 15 feet west of small stream, in top of large bowlder; aluminum tablet stamped "1616 Wash 1909"-----	1, 615. 325
Day Lake, 1.8 miles northwest of, at summit of hill, 150 feet northwest of cabin, just west of 8-foot cedar tree, east edge of trail, in top of granite bowlder; aluminum tablet stamped "2339 Wash 1909"-----	2, 338. 314
Day Lake, 3.5 miles northwest of, 20 feet west of cabin, east edge of trail, in root of stump; copper temporary bench mark-----	1, 971. 64
Day Lake, 3.7 miles northwest of, 7.5 miles southeast of Lyman, 15 feet north of stream, 40-foot waterfall about 70 feet to east, east edge of trail, top of rock about 3 feet high; aluminum tablet stamped "2005 Wash 1909"-----	2, 004. 959

GLACIER PEAK QUADRANGLE.

[Latitude 48°-48° 30'; longitude 121°-121° 30'.]

From Monte Cristo along Northern Pacific Ry. to point near Silverton.

Sauk River bridge, 60 feet west of west end of, 30 feet south of center of track, on 28-inch hemlock stump-----	2, 302. 12
Barlow Pass station, about 0.5 mile east of, 30 feet north of center of track, on hemlock stump with wide-spreading roots-----	2, 312. 71
Barlow Pass station, 12 feet east of, 12 feet north of center of track, on 30-inch larch stump-----	2, 346. 60
Barlow Pass, about 4,200 feet west of, near point of 5° curve left, 15 feet south of center of track, on 24-inch hemlock stump-----	2, 242. 38
Milepost 36, 400 feet west of, 15 feet south of track, on 30-inch hemlock stump-----	2, 203. 85
Milepost 34, 350 feet west of, on 36-inch hemlock stump-----	1, 927. 77

From Barlow Pass along highway down Sauk River to Darrington.

Barlow Pass station, about 0.25 mile northeast of, 10 feet east of wagon road, 150 feet north of long puncheon incline on road, on 10-inch hemlock tree-----	2, 249. 64
Barlow Pass station, about 0.5 mile northeast of, on root of double hemlock tree having 24-inch and 30-inch trunks, 15 feet west of wagon road, at station 37+50 on Goat Lake electric line survey----	2, 220. 64
Sauk River, junction of road from Barlow Pass with road along, on 28-inch hemlock tree-----	2, 202. 54
Sauk River, junction of road from Barlow Pass with road along, about 1,600 feet north of, on west edge of wagon road, on 20-inch hemlock tree-----	2, 192. 62
County road milepost 29, about 800 feet south of, on west edge of road, on 30-inch hemlock tree-----	2, 156. 08
County road milepost 29, about 1,100 feet north of, west side of wagon road at point where creek 10 feet wide first touches road on east, on 30-inch hemlock tree-----	2, 029. 80
Goat Lake wagon road, intersection with Sauk River road, on 5-foot cedar tree-----	1, 953. 97
Goat Lake wagon road, intersection with Sauk River road, about 1,800 feet north of, 150 feet south of old bridge site, west side of road, on 24-inch hemlock tree-----	1, 810. 28

	Feet.
Elliott Creek, about 200 feet north of mouth of, 80 feet north of bridge site, on east side of road, on 36-inch hemlock tree-----	1, 698. 86
Elliott Creek, about 750 feet north of mouth of, 150 feet north of narrow strip of bottom land near foot of rise in road, 15 feet west of road, on 20-inch larch tree-----	1, 645. 34
Elliott Creek, about 1.0 mile north of, west side of road, top of steep hill sloping north; on 48-inch hemlock tree-----	1, 578. 61
Milepost 25, about 1.0 mile south of, 30 feet east of right bank of river, 10 feet west of road, on 36-inch cedar tree-----	1, 498. 89
Milepost 25, 50 feet north of, creek crosses under bridge about 12 feet above water, 5 feet west of road, on 15-inch alder tree-----	1, 370. 70
Orient, at junction of north and south forks of Sauk River, about 140 feet southeast of meander corner on southwest bank of north fork, meander corner is on line between secs. 9 and 16, T. 30 N., R. 11 E., in granite boulder 4 by 6 feet and 2.5 feet above ground; copper bolt stamped "1241"-----	1, 248. 81
Milepost 23, about 1,080 feet north of, about one-third of distance up the second hill of "pitch" after passing creek, west side of road, on 30-inch cedar tree-----	1, 193. 85
Milepost 22, about 700 feet south of, 75 feet south of bridge across small creek on south side of clearing, east side of road, on granite boulder-----	1, 161. 54
Milepost 22, about 3,350 feet north of, 150 feet north of cabin between road and river, east side of road, on 36-inch hemlock tree-----	1, 098. 96
Milepost 21, about 20 feet north of, west side of road, on 36-inch cedar tree-----	1, 077. 34
T. 31 N., R. 11 E., secs. 29, 30, 31, and 32, on bearing tree for corner to, west side of road, 4-foot cedar tree-----	1, 035. 44
Pugh ranch, 500 feet north of, west side of road, on 5-foot cedar tree-----	1, 023. 13
T. 31 N., R. 11 E., about 1,500 feet from corner of secs. 29, 30, 31, and 32, left bank of Sauk River, 20 feet northeast of pool at foot of fall on Falls Creek 150 feet above its mouth, in ledge; copper bolt stamped "1039"-----	1, 040. 488
Snover cabin, about 660 feet north of, east side of road, on 30-inch hemlock tree-----	980. 81
McClellan ranch, 2,400 feet northwest of, 10 feet west of road, on 5-foot cedar tree-----	940. 95
T. 31 N., R. 10 E., between secs. 14 and 15, 100 yards northwest of Duber cabin, about 220 feet southeast of meander corner on west bank of Sauk River, 10 feet west of road, in blue ledge; copper bolt stamped "838"-----	839. 982
Bordens Creek, 50 feet north of, west side of road, on 15-inch hemlock tree-----	815. 42

From Monte Cristo Lake southeast along highway to Goat Lake.

Elliott Creek, bed of, at road crossing-----	1, 797
Goat Lake, 61 feet north of Coffin log house, 12 feet northeast of Goat Lake road, about 60 feet northeast of Elliott Creek, in rock in place; copper bolt stamped "3162"-----	3, 165. 579
Goat Lake, surface of water-----	3, 155. 6

From Marblemount east along highway to Cascade Pass.¹

Feet.

Mineral Park, 150 feet north of east end of bridge over North Fork, 30 feet east of trail, 50 feet northeast of dugout root house, in granite rock in bank 3.5 feet high, projecting 3 feet from earth; copper bolt stamped "1896 T. U. L."-----	1,394.978
Mineral Park, 2.5 miles northeast of, north bank of North Fork, 50 feet from old bridge, north of trail, in hemlock tree; nail-----	2,038.07
Gilbert cabin, 2.5 miles east of, 100 feet east of rock slide, north of trail; marked cross on sharp point at lower end of granite rock on grassy slope-----	4,947.91
Cascade summit; iron post stamped "5423." (This post was set in 1897 and the elevation as stamped was based upon an assumed datum at Chelan Falls on Columbia River)-----	5,390.457

Mazama, Methow, Slate Pass, and Stehekin quadrangles.

CHELAN, OKANOGAN, AND WHATCOM COUNTIES.

The elevations in the following list were determined by primary leveling extended from tidal gages at Tulalip and Fairhaven and from the precise-level line of the Coast and Geodetic Survey along the Northern Pacific Railway. The double-run line in the Slate Pass quadrangle from Harts Pass to the International Boundary was by the United States and Canada Boundary Survey.

The leveling was done as follows: Stehekin quadrangle in 1897 by P. F. Byrne, in 1899 by E. M. Fry, and in 1901 by C. E. Hill; Slate Pass quadrangle in 1899, 1900, and 1901 by Fry, in 1904 by Thomas Riggs, and in 1905 by George Newman; Methow quadrangle in 1899 and 1902 by Fry; and Mazama quadrangle in 1899 by Fry.

SLATE PASS QUADRANGLE.

[Latitude 48° 30'–49°; longitude 120° 30'–121°.]

From Panther Creek east along trail to Slate Creek Pass.

Feet.

Canyon Creek, 300 feet east of bridge over, 0.5 mile from mouth of, on north side and 30 feet from creek, 400 feet north of house of Old Channel Hydraulic Co., in rock bluff; aluminum tablet stamped----	1,899.720
Mill Creek, mouth of, 200 feet northwest of cabin near, 250 feet north of Canyon Creek, in rock wall near old placer diggings; aluminum tablet-----	2,440.520
Slate Creek, 500 feet north of mouth of, 100 feet east of Smoky Cabin, 100 feet east of trail, in large bowlder; aluminum tablet-----	2,838.759
Slate Creek camp, 1.5 miles southeast of, junction of Slate Creek and Benson Creek trail; top of bowlder, marked "4877"-----	4,805.41
Slate Creek Pass, at summit between Trout and Slate creeks, in large stone 10 feet south of trail; aluminum bolt stamped "6197"-----	6,197.563
From Slate Creek or Harts Pass southwest along trail to Barron, thence to Windy Pass and return to Harts Pass.	
Harts Pass (Slate Creek Pass), on trail at summit between Trout and Slate creeks, in top of bowlder; aluminum bolt stamped "6197"-----	6,197.563

¹ This line closes 3 feet low and is unadjusted.

	Feet.
Harts Pass, 0.7 mile southwest of, at creek crossing road, in root of twin trees; spike.....	5, 789. 999
Harts Pass, 1.3 miles southwest of, about 2 miles south of Barron, at creek crossing road; point on rock.....	5, 120. 30
Harts Pass, 1.7 miles southwest of, on north bank of road, in root of spruce tree; spike.....	5, 073. 03
Barron, 75 feet from, 2.0 miles southwest of Harts Pass, on north edge at junction of Barron and Slate Creek roads; point on conical rock.....	4, 806. 04
Barron, 6 feet west of road, 3 feet west of post office, in store of Methow Trading Co. (now Simon Veasy), 150 feet east of Skagit River Hotel; iron post stamped "5353 Tul".....	5, 353. 126
Barron, 0.5 mile north of, 50 feet west of road, in west side of tamarack stump; nail.....	5, 843. 98
Barron, 3.9 miles north of, west side of road, in balsam stump; nail head.....	5, 994. 88
Barron, 1.5 miles north of, 100 feet north of Sky trail, 300 feet east of Barron trail, in Windy Pass, in lowest part of saddle on divide between Pasayton River and north fork of Slate Creek, in top of largest boulder; bronze tablet stamped "6262 Tul".....	6, 262. 250
Harts Pass, 4.5 miles northwest of, in middle of pass between a fork of Slate Creek and Pasayton River, on small knoll, 100 feet north of trail; iron post stamped "6575 Tul".....	6, 575. 487
Harts Pass, 4 miles northwest of, 3 feet to left of trail, in pass between Pasayton River and fork of Slate Creek, in root of small tamarack tree; nail.....	6, 703. 28
Harts Pass, 2.8 miles northwest of, 4 feet below trail; painted rock.....	6, 987. 69
Harts Pass, 1.5 miles northwest of, near top of bench coming up from valley, on boulder.....	6, 770. 97
Harts Pass, 0.5 mile northwest of, on high trail from pass, on boulder.....	6, 411. 62

From Windy Pass northeast along trail to Pasayton River, thence north down river to international boundary line.

Windy Pass, 0.6 mile northeast of, 4 feet from trail, in root of leaning spruce tree; head of spike.....	5, 780. 35
Windy Pass, 1.3 miles northeast of, 20 feet from creek, in root of spruce tree; 20-penny spike.....	5, 388. 22
Windy Pass, 2.1 miles northeast of, 50 feet from trail, up east fork of Pasayton River, in large spruce tree; spike.....	5, 097. 48
Windy Pass, 3.6 miles northeast of, west bank of river below small flat on west side and above slide on west side of river; in large rock; aluminum tablet stamped "4928 Tul".....	4, 928. 236
La Roche cabin, 2.8 miles south of, west bank of river, 75 feet north of first tributary on west, in root of balsam tree; spike.....	4, 904. 49
La Roche cabin, 0.8 mile south of, in root of spruce tree; spike.....	4, 788. 51
La Roche cabin, 70 feet from, at forks of new and old trails, 10 feet from both trails; iron post stamped "4767 Tul".....	4, 766. 977
La Roche cabin, 0.5 mile north of, 20 feet west of trail, east side of river; corner of large boulder.....	4, 706. 21
La Roche cabin, 1.3 miles north of, west side of river; point on boulder.....	4, 647. 55
Pasayton River, on west bank of river just above falls, 70 feet west of trail to Barron, in rock; aluminum tablet stamped "4632 Tul".....	4, 631. 568

	Feet.
La Roche cabin, 2.25 miles north of; ring of paint around point of rock-----	4, 554. 00
La Roche cabin, 3 miles north of, 20 feet from west bank of river, in root of balsam tree; spike-----	4, 506. 60
La Roche cabin, 4 miles north of, east bank of river below a goose-neck of same, in root of spruce tree; spike-----	4, 454. 99
La Roche cabin, 4.5 miles north of, 100 feet south of where trail crosses river, on east bank; iron post stamped "4443 Tul"-----	4, 443. 453
La Roche cabin, 5.3 miles north of, west side of river, 11 miles south of international boundary; ring of paint around rock-----	4, 373. 65
International boundary, 8.6 miles south of, west side of river, 5 feet just around bend to south of Robinson's upper cabin, in root of dry pine; spike-----	4, 204. 331
International boundary, 8.2 miles south of, west bank of river, in knuckle of balsam tree; spike-----	4, 178. 74
International boundary, 6.7 miles south of, 50 feet east of river; point on large boulder-----	4, 092. 74
International boundary, 5.9 miles south of, 150 feet south of small creek, west side of river 50 feet distant and 12 feet higher; iron post stamped "4052 Tul"-----	4, 051. 786
International boundary, 3.5 miles south of, east side of river, on gravel bar; point on large boulder-----	3, 998. 20
International boundary, 2.1 miles south of, west bank of river, in root of balsam tree; spike-----	3, 943. 78
International boundary, 1.5 miles south of, in forks of Barron and Boundary trail, in base of pine tree; spike-----	3, 903. 69
International boundary, 1.0 mile south of, west side of trail, in root of spruce tree; spike-----	3, 912. 87
International boundary, 0.5 mile south of, west side of trail, in root of pole pine stump; nail-----	3, 879. 93
Vista on international boundary, 10 feet east of trail, in root of tree; head of nail-----	3, 851. 95
International boundary, 300 feet east of Pasayton River, 10 feet east of trail; iron post stamped "3853 Tul"-----	3, 852. 854
From Winthrop northwest along highway and trail to Slate Pass (part of line).	
Robinson Creek, 3.0 miles south of, 400 feet north of milepost 3, in root of 12-inch pine tree; nail-----	2, 374. 56
Robinson Creek, 2.0 miles south of, 5 feet west of milepost 2; top of stone-----	2, 427. 37
Robinson Creek, 4 feet east of southeast corner of Methow Trading Co.'s warehouse, in stone; aluminum bolt stamped "2521 T"-----	2, 521. 528
Robinson Creek, 2.5 miles north of, north side of trail; on top of stone-----	2, 713. 47
Slate Creek Pass, summit of, 10 feet south of trail, 4.0 miles south of Slate Creek camp, in top of large stone; bolt-----	6, 197. 56

MAZAMA QUADRANGLE.

[Latitude 48° 30'–49°; longitude 120°–120° 30']

From Winthrop northwest along highway and trail to Slate Creek Pass (part of line).

Milepost 8, about 3,000 feet west of, 27 feet northwest of a fir tree and 30 feet south of a fir tree, 5 feet south of road, in stone; aluminum bolt stamped "2165 T"-----	2, 165. 521
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METHOW QUADRANGLE.

[Latitude 48°-48° 30'; longitude 120°-120° 30'.]

From Vroman ranch northwest along highway via Methow to Twisp.

	Feet.
Methow post office, at southeast corner of Bolinger's store, 10 feet west of State road; iron post stamped "1158 T"-----	1, 157. 912
McFarland Creek, 100 feet east of, east side of road; top of large bowlder-----	1, 253. 64
Gold Creek, 1,000 feet north of, east side of road; top of stone-----	1, 324. 13
Peterson ranch, 300 feet south of gate and 300 feet southwest of barn, on top of stone-----	1, 358. 83
T. 32 N., R. 22 E., NW. $\frac{1}{4}$ sec. 29, 100 feet west of house at Ferris ranch, 250 feet northeast of barn, east side of road; iron post stamped "1452 T"-----	1, 452. 299
Ferris ranch, 2.0 miles north of, 50 feet east of road, 1,000 feet west of Methow River, on top of stone-----	1, 483. 41
Ferris ranch, 3.0 miles north of, 150 feet west of road, at point 1,000 feet north of north end of lane, on top of stone-----	1, 546. 38
Alder Creek crossing, 0.25 mile south of, 10 feet west of road, in root of pine tree; nail-----	1, 810. 40
Cushing ranch, 150 feet northwest of house, 10 feet east of road, on top of stone-----	1, 826. 39
Twisp, 2.0 miles south of, on east side of road, at north end of small lake, on top of stone-----	1, 807. 08
Twisp, at northeast corner of Caldwell's blacksmith shop, 300 feet southwest of post office; iron post stamped "1619 T"-----	1, 618. 868

From Twisp west along highway up Twisp River and down Beaver Creek to mouth (part of line).

Twisp, 1.5 miles west of, 100 feet north of north end of bridge over Twisp River, in top of stump; nail-----	1, 666. 45
Elbow Coulee, mouth of, 10 feet north of road at S. M. Newby ranch; iron post stamped "1994 T"-----	1, 994. 045
Newby ranch, 1.0 mile west of, 4 feet south of road, at foot of pine tree, on top of bowlder-----	2, 025. 35
Newby ranch, 2.0 miles west of, 10 feet south of road, on top of stone-----	2, 091. 80
Newby ranch, 4.5 miles west of, 500 feet north of cabin, on north side of road, in root of 12-inch tree; nail-----	2, 221. 49
Old Scaffold camp ground, at south side of road; iron post stamped "2329 T"-----	2, 328. 957
Old Scaffold camp ground, 1.0 mile west of, at south side of road, on top of stone-----	2, 396. 25
War Creek, 1 mile west of mouth of, in center of road, on top of stone-----	2, 459. 73
War Creek, 3 miles west of mouth of, 20 feet south of road, at foot of pine tree, on top of stone-----	2, 667. 63
War Creek, 4 miles west of mouth of, in top of stump in center of road; nail-----	2, 799. 11
Gilbert camp, 8 miles east of, 10 feet south of road; iron post stamped "2806 T"-----	2, 806. 110

From Twisp north along State road to Winthrop.

T. 34 N., R. 21 E., sec. 25, 4 miles north of Twisp, 200 feet south of Hartle ranch house, 150 feet west of road; iron post stamped "1688 T"-----	1, 687. 903
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	Feet.
Twisp, 6 miles north of, 50 feet west of road, on top of stone-----	1, 750. 20
Twisp, 7 miles north of, 100 feet east of road, on top of stone-----	1, 747. 07
Winthrop, 0.5 mile west of, south side of road, on stone-----	1, 803. 45
Schumber ranch, 800 feet north of house, 150 feet west of road, in root of pine tree; nail-----	1, 796. 42
Schumber ranch, 1.0 mile north of, 150 feet west of road, 300 feet from Methow River, in root of pine tree; nail-----	1, 811. 56
Methow River, surface of water-----	1, 787
Winthrop, at town pump, 100 feet south of Methow Trading Co.'s store, 100 feet north of hotel; iron post stamped "1765 T"-----	1, 765. 499
From mouth of Libby Creek north along trail up Libby Creek and Smiths Canyon to Twisp.	
Lookout Mountain, summit of pass east of, between Libby Creek and Twisp Creek, on west side of trail; on top of rock 4 by 5 by 9 feet--	3, 533. 99
From Newby ranch north along trail up Elbow Coulee to Winthrop.	
Summit between Elbow Coulee and Rader Lake, 50 feet east of trail; on top of white rock-----	2, 629. 67
Rader Lake (Moccasin Lake), water surface-----	2, 193. 3
Schumber ranch, 800 feet north of house, 150 feet west of road, in root of pine tree; nail-----	1, 796. 42
From Winthrop east along highway up Bear Creek to mouth of Pipestone Canyon.	
Winthrop 4.0 miles southeast of, 0.5 mile southwest of mouth of Pipe- stone Canyon, 1,000 feet north of cabin, south side of trail; iron post stamped "2398 T"-----	2, 398. 708
From Silver northeast along highway to Red Shirt stamp mill.	
Silver, 25 feet south of southeast corner of post office, west side of street; iron post stamped "1513 T"-----	1, 513. 012
Silver, 1.0 mile north of, 250 feet southwest of schoolhouse, 50 feet west of road, in root of double pine tree; nail-----	1, 556. 78
Silver, 4 miles northeast of, 500 feet northwest of Red Shirt Mining & Milling Co.'s stamp mill, 100 feet south of Beaver Creek, north side of road; iron post stamped "1912 T"-----	1, 911. 960
From Red Shirt south to Oglesby ranch.	
Oglesby ranch house, opposite road 30 feet northeast of, in granite boulder in group; tablet stamped "1967"-----	1, 966. 360
Oglesby ranch gate, 0.25 mile west of, 15 feet north of road; top of boulder, marked "1899"-----	1, 899
Boyle's ranch, 0.25 mile west of, 20 feet south of road, east end of line of boulders; rock marked "1774"-----	1, 773. 60
Red Shirt stamp mill, 600 feet northwest of, 100 feet south of Beaver Creek, at fence corner, north side of road; iron post stamped "1912"-----	1, 911. 960
Up Libby Creek along highway and trail to J. E. Smith ranch.	
J. E. Smith ranch, 100 feet west of, where trail up Libby Creek enters ranch; iron post stamped "2500 T"-----	2, 500. 683

Up McFarland Creek along highway and trail to Lambert ranch.

	Feet.
T. 31 N., R. 22 E., sec. 32, 25 feet west of gate at Lambert ranch, 10 feet east of trail, 4 miles up McFarland Creek; iron post stamped "2232 T"-----	2, 282. 506

Up Squaw Creek along highway and trail to Squaw Creek camp.

Squaw Creek camp, 1.0 mile north of, 3.0 miles from mouth of Squaw Creek, 8 feet north of road; iron post stamped "1983 T"----	1, 983. 721
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STEHKIN QUADRANGLE.

[Latitude 48°-48° 30'; longitude 120° 30'-121°.]

From head of Lake Chelan up Stehkin River to Bridge Creek.

Log cabin, on rock in trail near head of Lake Chelan-----	1, 086. 0
Cabin on trail, 0.2 mile south of, on 3-foot cottonwood tree-----	1, 202. 7
Pine tree 2 feet in diameter, 25 feet to right of trail, on top of stone 5 feet north of tree-----	1, 285. 96
Side of ravine, top of stone of 2 cubic yards volume, on right side of trail; elevation marked on stake-----	1, 414. 01
Junction of Agnes and Stehkin rivers, 105 feet north of river bank, in an open space about 1,000 feet east of junction of rivers, in root of 2-foot pine tree; nail, elevation marked on a board nailed to a tree-----	1, 488. 3
Twin Lake, between two 4-foot pine trees; these trees are 20 feet apart and near dry outlet of lake, on highest point of rock 5 by 4 by 3 feet-----	2, 152. 40
Narrow bridge on small stream, at corner of; top of rock 6 by 5 by 3 feet-----	2, 001. 00
Cabin, 155 feet north of, in root of 5-foot cedar tree; nail-----	2, 059. 79
Bridge Creek, 225 feet south of new bridge, in root of 2½-foot fir tree; nail-----	2, 174. 58
NOTE.—The remainder of this line is unadjusted and closes 3 feet high.	
Park Creek bridge, at west end of, in 18-inch fir stump; nail-----	2, 255. 72
State road camp on Stehkin River, 125 feet west of trail leading to, on top of rock 8 by 6 by 6 feet, 22 feet south of 3-foot tree-----	2, 689. 18
Pershall cabin, 25 feet from northeast corner of, in root of 2-foot cottonwood tree; nail-----	3, 101. 67
Pass, at first summit of, in root of hemlock tree; nail-----	4, 900. 93
Summit; iron post stamped "5423"-----	5, 893. 286

From Twisp west along highway and trail up Twisp Creek and down Bridge Creek to its mouth.

South Creek, 3.0 miles east of crossing, in top of stump in center of road; nail-----	2, 890. 07
South Creek crossing, 300 feet west of, south side of road, in root of fir tree; nail-----	3, 120. 10
Gilbert camp, 50 feet east of assay office, south side of street; iron post stamped "3527 T"-----	3, 527. 567
Gilbert, 2.0 miles west of, north side of trail, at foot of 45-inch fir tree; on top of stone-----	4, 251. 89
Gilbert, 3.0 miles west of, 4 feet east of north end of bridge over Twisp River; cross on top of large flat boulder-----	4, 485. 04

	Feet.
Twisp Pass, summit of, 10 feet south of trail; iron post stamped "6066 T" -----	6, 066. 274
Twisp Pass, 2.5 miles west of, south side of trail, on top of stone-----	5, 063. 72
Twisp Pass, 5 miles west of, 5 feet south of trail, in root of tree; nail -----	3, 802. 68
Twisp Pass, 11 miles west of, west side of trail, on top of stone-----	3, 473. 90
Twisp Pass, 12 miles west of, 0.2 mile east of Maple Creek, south side of trail, in root of tree; nail-----	3, 190. 23
Bridge Creek, 0.5 mile east of mouth of, 10 feet south of trail, in root of 6½-foot cedar tree; nail-----	2, 556. 32
Bridge Creek, mouth of, 225 feet south of new bridge, in root of 30-inch fir tree; nail-----	2, 174. 58
Up Chewawa and Buck creeks northwest along highway to Buck Creek Pass (part of single-spur line from Leavenworth; elevations unreliable).	
Rock Creek, 4.5 miles northwest of, 6 feet east of trail in middle of open bushy west slope about 200 feet south of little stream, in rock about 6 feet square and 3 feet high; bronze tablet stamped "2637 T"-----	2, 628. 818
Rock Creek, 6.5 miles northwest of, 2 feet east of trail, 300 feet north of small stream, in root of big fir tree; nail marked "2660"-----	2, 651. 14
Phelps Creek, 125 feet south of, 36 feet northeast of trail, in big rock; bronze tablet stamped "2782 T"-----	2, 773. 595
Phelps Creek, 0.8 mile northwest of, 60 feet north of little creek, 6 feet west of trail, in root of hemlock tree; nail marked "2914"-----	2, 895. 87
Phelps Creek, 1.5 miles northwest of, near north edge of big open burn, east of trail, in root of big fir tree; nail marked "3044"-----	3, 025. 74
Buck Creek, 900 feet southeast of, 2 feet east of Chewawa Creek, top of quartz-crowned projection on bedrock about water level (high); marked "3217"-----	3, 198. 87
Chewawa Creek, 2 feet east of, 1,125 feet north of Buck Creek, 12 feet north of trail, in bedrock about high-water level; bronze tablet stamped "3373 T"-----	3, 354. 208
Forks of Buck and Chewawa creeks, 1.0 mile northwest of, about 200 feet northwest of little creek in meadow, 12 feet west of trail, in root of fir tree; nail marked "3840"-----	3, 821. 67
Forks of Buck and Chewawa creeks, 2.0 miles northwest of, 11 feet west of trail, in root of spruce tree; nail marked "4254"-----	4, 235. 34
Forks of Buck and Chewawa creeks, 3.0 miles northwest of, 675 feet southeast of Buck Creek ford, 4 feet west of trail; top of big rock marked "4471"-----	4, 452. 48
Buck Creek, surface of water at trail crossing, September 20, 1901----	4, 475. 8
Forks of Buck and Chewawa creeks, 4.0 miles northwest of, 135 feet west of Buck Creek, 9 feet east of trail, in top of big plane-topped slaty rock about 15 inches in diameter; bronze tablet stamped "4885 T"-----	4, 866. 200
Buck Creek, at extreme headwaters of, 5 miles northwest of forks of Buck and Chewawa creeks, 600 feet north of trail, 500 feet south of lowest sag in saddle at summit of Cascade Divide, in large rock; tablet stamped "5796"-----	5, 777. 586
Summit of pass at headwaters of Buck Creek; ground at lowest sag in saddle-----	5, 766. 83

Bellingham, Blaine, Mount Vernon, and Sumas quadrangles.

SKAGIT, SNOHOMISH, AND WHATCOM COUNTIES.

The elevations in the following list were determined by primary leveling extended from tidal-gage bench marks established by the Coast and Geodetic Survey at Fairhaven and Tulalip.

The leveling was done as follows: Blaine, Sumas, and Bellingham quadrangles in 1905 by G. C. Jacobs; Bellingham quadrangle in 1898 by W. S. Wheeler; Mount Vernon quadrangle in 1898 by L. D. Ryus and Wheeler and in 1909 by W. A. Gelbach. The work of 1909 was done in cooperation with the State.

MOUNT VERNON QUADRANGLE.

[Latitude 48°-48° 30'; longitude 122°-122° 30'.]

From Belleville south along Great Northern Ry. to Marysville.

	Feet.
Belleville, 125 feet northwest of station; iron post stamped "29 B"...	30.058
Burlington, 0.5 mile north of, 30 feet west of railroad, 300 feet north of railroad switch, 1,260 feet south of yard-line signboard for Burlington, in base of 8-foot cedar stump 15 feet high; nail in notch, marked "29"-----	30.008
Burlington, at northwest corner of Fairhaven and Regent avenues, southeast corner of school yard, 24 feet north of fence; iron post stamped "35 B"-----	35.753
Burlington, south of, bridge over Skagit River-----	48.4
Mount Vernon, 150 feet southwest of station, 50 feet east of Hotel Mount Vernon, 12 feet north of sidewalk, east side of woven-wire fence; iron post stamped "Prim. Trav. Sta. No. 17, 23 Wash 1909"-----	23.660
Mount Vernon, 2.4 miles south of, at crossing, 100 feet west of tracks, on south side of road; iron post stamped "9 Wash 1909"-----	8.978
Fir, 75 feet southwest of station, southeast corner of crossroads, 3 feet east of telephone pole; iron post stamped "Prim. Trav. Sta. No. 1, 5, Wash., 1909"-----	5.466
Milltown, 200 feet north of station sign, 100 feet east of tracks, on east side of road, 3 feet west of Milltown pool room, 5 feet north of telephone pole; iron post stamped "4 Wash 1909"-----	4.209
Stanwood, 50 feet west of station, 6 feet north of sidewalk; iron post stamped "Prim. Trav. Sta. No. 2, 5, Wash., 1909"-----	5.390
Stanwood station, 2.0 miles southeast of, 100 feet south of track, on east side of road at crossing; iron post stamped "10 Wash 1909"-----	10.039
Norman, in front of platform; top of rail-----	33.6
Silvana, 70 feet south of station, 70 feet east of tracks, on east side of fence; iron post stamped "Prim. Trav. Sta. No. 3, 28, Wash., 1909"-----	27.929
English, 300 feet north of platform, 100 feet east of tracks, on east side of road by rail fence; iron post stamped "121 Wash 1909"-----	119.795
Stimpson Crossing; top of rail-----	96.7
Marysville, 3.4 miles north of, at crossing, 60 feet east of tracks, on north and west side of roads; iron post stamped "70 Wash 1909"-----	69.153

18249°—Bull. 557—14—7

From Woolley south along Northern Pacific Ry. to Hartford Junction.

	Feet.
Woolley, 20 feet northeast of northeast corner of station; iron post stamped "50 T. U. L."-----	50. 204
Seattle & International Ry. and Seattle & Northern Ry., crossing; top of rail-----	55. 38
Clear Lake, 36 feet north of station, 12 feet east of northeast corner of platform; iron post stamped "44 T. U. L."-----	44. 050
Clear Lake, in front of station; top of rail-----	43. 5
Parker, in front of station; top of rail-----	91. 9
Monthorn, in front of station; top of rail-----	115. 7
McMurray, about 1,000 feet north of station, 25 feet east of track, about 300 feet north of seventieth milepost, in colored rock; copper bolt stamped "248 T. U. L."-----	248. 210
McMurray, in front of station; top of rail-----	248. 4
Lake Cavanaugh road crossing about 1,080 feet north of sixty-ninth milepost, 480 feet east of, in dark-colored rock, 8 feet north of road; copper bolt stamped "259 T. U. L."-----	259. 255
Bryant, 270 feet south of station, 25 feet west of tracks; iron post stamped "171 T. U. L."-----	170. 015
Arlington, in front of State bank; hydrant-----	112. 408
Arlington, 1.5 miles south of, 40 feet west of track, in root of 36-inch cedar tree; nail-----	131. 20
Arlington, 3.0 miles south of, 100 feet north of slide guard west of track, in root of 30-inch cedar stump 3 feet high, 5 feet west of track; nail-----	145. 22
Seattle & International Ry. bridge over Stimson Logging R. R., 500 feet south of, 10 feet east of track, 20 feet south of half-mile board, in 42-inch cedar stump 4 feet high; nail-----	159. 80
Getchell, 0.8 mile south of, 6 feet east of track, at top of divide, in 84-inch cedar stump 9 feet high; nail-----	342. 42
Hartford Junction, 1.0 mile north of, 15 feet west of track, in 108-inch cedar stump; nail-----	292. 40
Hartford Junction, in front of station; top of rail-----	232. 0
Hartford Junction, junction of Seattle & International Ry. and Everett & Monte Cristo R. R., switch; top of rail-----	229. 84
Hartford Junction, 25 feet northeast of station, midway between tracks of Seattle & International Ry. and Everett & Monte Cristo R. R., iron post stamped "232 T. U. L."-----	230. 816
Lake Stevens; surface of water Nov. 9, 1909-----	210. 9

From Tulalip east along highway to Marysville, thence northeast along Stimson Logging R. R. to Northern Pacific Ry.

Tulalip, about 275 feet southeast of clayey bluff on which Madrona triangulation station stands, on southeast face of large flat granite boulder below mean sea level; cross mark-----	-3. 540
Tulalip Indian Reservation Agency, 125 feet north of corner of picket fence, 75 feet south of road and about 225 feet north of west of northwest corner of fence around agency, in gray granite rock which stands 1 foot out of ground; copper bolt stamped "65 T. U. L."-----	64. 715
Marysville, 50 feet south of southeast corner of station, about 50 feet east of track; iron post stamped "16 T. U. L."-----	14. 972

From Hartford Junction east along Northern Pacific Ry. to Granite Falls, thence northwest along highway to Arlington.

	Feet.
Lochsloy, 70 feet south of Lochsloy saloon, south side of road, 8 feet southeast of large stump; iron post stamped "248 Wash 1909"-----	246. 716
Granite Falls, 3 miles northwest of, 0.5 mile southwest of Anderson's shingle mill, in fork of road; iron post stamped "309 Wash 1909"-----	307. 774
Granite Falls, 4 miles northwest of, on Arlington road on east side of river, crossing of skid road to Anderson's mill, on south side of road, in root of tree; copper temporary bench mark-----	296. 52
Granite Falls, 7 miles northwest of, 7.5 miles southeast of Arlington, west side of road, north of Hans Lund's gate; iron post stamped "Prim. Trav. Sta. No. 7, 156, Wash., 1909"-----	154. 836
Arlington, 4 miles southeast of, on east side of river, on west side of Granite Falls road, 30 feet north of T road east; iron post stamped "98 Wash 1909"-----	96. 272
Arlington, hydrant in front of Arlington State bank, on letter "R"---	112. 41
Arlington, Haller schoolhouse, 5 feet east and 8 feet north of northwest corner; iron post stamped "104 T. U. L."-----	102. 579

From Arlington west along highway to Silvana.

Silvana, 3.0 miles east of, 3.5 miles west of Arlington, southwest corner of crossroads, in school yard (district No. 22), 15 feet west of northeast corner of fence; iron post stamped "46 Wash 1909"---	44. 658
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From McMurray west along highway to Milltown.

McMurray, 0.8 mile south of, 480 feet east of crossing, 8 feet north of road, in rock; copper bolt-----	259. 255
McMurray, 60 feet east of station, on east side of tracks, 3 feet south of gate; iron post stamped "Prim. Trav. Sta. No. 11, 246, Wash., 1909"-----	246. 664
Milltown, 2.8 miles east of, 5 feet south of school-yard gate, outside of fence; iron post stamped "353 Wash 1909"-----	353. 774

From Woolley west along Great Northern Ry. to Whitney, thence south and east along highway to Fir.

Woolley, 0.7 mile west of, 2,700 feet east of milepost 20, 2.7 miles east of county road crossing, on north side of railway, in notch in base of cedar stump 6 feet high and 6 feet in diameter; nail-----	48. 891
Woolley, 1.3 miles west of, at northwest corner of intersection of Woolley and Burlington county road and railroad right of way, across track from Hansen place, in base of cedar stump 15 feet high and 7 feet in diameter, in notch; spike-----	46. 07
Woolley, 2.2 miles west of, at northeast corner of intersection of county road and railroad right of way, in line of fence on east side of north-south county road, between secs. 33 and 34, T. 35 N., R. 4 E., 185 feet south of corner of secs. 27, 28, 33, and 34, 2 feet north of line of fence on north edge of railroad right of way, 345 feet east of station of Sterling shingle mill; iron post stamped "39"---	40. 445
Burlington, 1.0 mile east of, 20 feet north of railroad, 105 feet west of county road crossing, 1,180 feet west of railroad trestle 25, 250 feet northwest of W. H. Joyce's house, south of railroad and east of county road, in notch in base of 4½-foot cedar stump 7 feet high; spike marked "33"-----	34. 292

	Feet.
Avon, 100 feet east of station, 50 feet north of track, 6 feet south of store building; iron post stamped "21 Wash 1909"-----	20.816
Fredonia, 60 feet northeast of platform, north side of road, 30 feet west of door of Mrs. E. Brown's house, in corner of picket fence; iron post stamped "8 Wash 1909"-----	8.764
Whitney, 60 feet west of station, 10 feet south of track, 3 feet east of crossing post; iron post stamped "Prim. Trav. Sta. No. 18, 3 Wash 1909"-----	3.339
Whitney, 2.0 miles south of, northeast corner of crossroads, southwest corner of school yard, 6 feet north of steps; iron post stamped "4 Wash 1909"-----	4.304
La Conner, 1.0 mile east by 0.5 mile south of, northeast corner of T road north (private road leading west), 0.25 mile west of northeast corner of sec. 6, T. 33 N., R. 3 E.; iron post stamped "5 Wash 1909"-----	5.154
La Conner, about 5 miles southeast of, north fork of Skagit River, west end of south approach to bridge over, 4 feet west of gate, on south side of road; iron post stamped "9 Wash 1909"-----	9.559
T. 33 N., R. 3 E., quarter corner between secs. 14 and 23, 2.25 miles west of Fir station, northeast corner of crossroads; iron post stamped "7 Wash 1909"-----	6.961
From Mount Vernon east along highway to Big Lake and Clear Lake.	
Mount Vernon, 3.8 miles east of, junction of road from Mount Vernon with Big Lake-Clear Lake road, in a V formed by the roads; iron post stamped "146 Wash 1909"-----	147.004
Big Lake, 40 feet south of station, east side of picket fence; iron post stamped "Prim. Trav. Sta. No. 13, 95, Wash., 1909"-----	95.266
From Mount Vernon west along highway to a point 3 miles south of Whitney.	
Mount Vernon, First National Bank, 2 blocks west and 1 block north of station, south side of entrance to vestibule, 6 inches north and 8 inches east of outside edge of brick wall, in cement sidewalk; aluminum tablet stamped "24 Wash 1909"-----	24.076
Mount Vernon, 3.0 miles west of, corner of secs. 33, 34, 3, and 4, Tps. 34 and 33 N., R. 3 E., southeast corner of crossroads; iron post stamped "17 Wash 1909"-----	16.883
From Arlington east along Northern Pacific Ry. to bridge over Stillaguamish River.	
Arlington, 3.5 miles northeast of, south of road, in root of 30-inch maple tree; nail-----	170.17
Oso, 7.5 miles west of, old trail to shack, south side of road, in 72-inch cedar stump 7 feet high; nail-----	208.72
Oso, 5 miles west of, 100 feet from bridge east, on north side of road, in root of 9-inch fir tree; nail-----	106.46
Stillaguamish River, 0.5 miles west of iron bridge over, 150 feet southeast of road, opposite house, in sandstone ledge projecting from hill; copper bolt stamped "164 T. U. L."-----	162.787
From McMurray east along highway and trail via Lake Cavanaugh and Day Lake to Lyman Ferry.	
Lake Cavanaugh road crossing on Northern Pacific Ry., 0.8 mile south of McMurray, 1,200 feet east of, 30 feet north of trail crossing road, in root of tree; copper temporary bench mark-----	312.66

	Feet.
Northern Pacific Ry. crossing, 3.1 miles east of, turn of road to north, 50 feet east of corduroy bridge, junction of skid roads from south and east; iron post stamped "539 Wash 1909"-----	539.409
Grandstrom's, 0.5 mile west of, 100 feet east of road fork to farmhouse, north side of road, in root of tree; copper temporary bench mark-----	561.29
Grandstrom's, south side of road east of gate, 4.25 miles east of Northern Pacific Ry. crossing; iron post stamped "Prim. Trav. Sta. No. 12, 548 Wash 1909"-----	548.085
T. 33 N., Rs. 5 and 6 E., just north of corner of secs. 13, 18, 19, and 24, crossing of Lake Cavanaugh road with range line, south of road, 17 feet east of 6-foot cedar tree with blazes of township line; iron post stamped "825 Wash 1909"-----	825.140
Grandstrom's, 4.6 miles east of, junction of Deer Creek trail and Lake Cavanaugh road, 350 feet east of bridge over north fork of Pilchuck, south side of road; iron post stamped "903 Wash 1909"-----	903.304
Deer Creek trail, 2 miles from Lake Cavanaugh road, 75 feet north of creek where trail branches to cabin, 155 feet east by southeast of cabin, about 0.5 mile southeast of high, round, rocky knob; iron post stamped "1150 Wash 1909"-----	1,150.615
Day Lake trail, 3.3 miles from where trail leaves public road along skid road near Lyman Ferry, east edge of trail, on higher of two boulders; aluminum tablet stamped "1352 Wash 1909"-----	1,352.407
Day Lake trail, 2.2 miles from road at Lyman Ferry, fork of trail to southwest, in root of tree; copper temporary bench mark-----	504.05
Day Lake trail, 1.3 miles from public road near ferry, at point where trail leaves skid road, east edge of trail, 40 feet north of cloth forest fire warning signs on trees; iron post stamped "291 Wash 1909"-----	291.468
From junction of Jim Crow road with Arlington and Oso road to northwest corner of T. 31 N., R. 6 E.	
T. 31 N., R. 6 E., 35 feet south of northwest corner of, south of forks of road, in 60-inch cedar tree; nail-----	199.00
T. 31 N., R. 6 E., 25 feet south of northwest corner of, south of forks of road; iron post stamped "196 T. U. L."-----	198.321

BLAINE QUADRANGLE.

[Latitude 48° 45'–49°; longitude 122° 30'–122° 45'.]

From Fairhaven along Great Northern Ry. to Blaine, thence east along highway to Delta.

T. 38 N., R. 2 E., sec. 13, on north side of road east of Great Northern Ry., at intersection of rights of way; iron post stamped "107 B"-----	107.414
Ferndale, north of road, 15 feet east of wooden approach to bridge over Nooksack River, sec. 29, T. 39 N., R. 2 E.; iron post stamped "26 B"-----	26.675
Enterprise, sec. 7, T. 39 N., R. 2 E., in road crossing west of track, 480 feet north of platform; iron post stamped "70 B"-----	70.772
Custer, 1.0 mile south of, in northeast angle of road opposite Brown barn; iron post stamped "64 B"-----	64.933
T. 40 N., R. 1 E., secs. 26 and 27, 1.1 miles northwest of Custer, west of road, 50 feet north of track, road between sections; iron post stamped "48 B"-----	49.110

	Feet.
Blaine, sec. 6, T. 40 N., R. 1 E., in stone step on north side of main entrance to Blaine Hotel; aluminum tablet stamped "41 B"-----	41.499
T. 40 N., R. 1 E., sec. 3, 750 feet east of entrance to J. McGrath's place, in southwest angle of forks of road; iron post stamped "452 B"-----	452.909
T. 40 N., R. 2 E., secs. 5 and 6, 1,000 feet west of entrance to Crawford place, on south side of road, 1 foot north of east-west fence, 38 feet east of center of road between sections; iron post stamped "180 B"-----	180.465
Delta, at end of north road, in southwest angle of forks; iron post stamped "124 B"-----	124.555

From Ferndale along road to point 3 miles west.

Ferndale, 1.1 mile west of, Pearson triangulation station; bronze tablet stamped "276 B"-----	276.596
Ferndale, 2.0 miles west of, in southwest angle of crossroads; iron post stamped "188 B"-----	188.439

SUMAS QUADRANGLE.

[Latitude 38° 45'-39°; longitude 122° 15'-122° 30'.]

From Delta south along Meridian road to Bellingham.

T. 40 N., R. 3 E., sec. 19, 2 feet east of fence corner, in northwest angle of crossroads; iron post stamped "93 B"-----	93.412
T. 40 N., R. 2 E., sec. 36, at southeast corner of Lamont place, 125 feet north of north end of bridge, in northwest angle of crossroads; iron post stamped "72 B"-----	73.154
Laurel school yard, T. 39 N., R. 3 E., sec. 19, 250 feet north of crossroads, in northwest corner of school yard; iron post stamped "82 B"-----	82.654
T. 38 N., R. 2 E., northeast corner of sec. 1, west of road; iron post stamped "187 B"-----	187.821

From Bellingham north along Bellingham Bay & British Columbia R. R. to Sumas.

Van Wyck, T. 38 N., R. 3 E., sec. 3, 50 feet north of station; iron post stamped "186 B"-----	186.298
Wahl, northeast angle of road crossing; iron post stamped "251 B"-----	251.685
Central, southwest angle of road crossing, 40 feet southwest of station; iron post stamped "133 B"-----	133.900
Everson, 150 feet south of station, west of track, east of road; iron post stamped "83 B"-----	83.750
Clearbrook, 150 feet southeast of station, at northeast angle of road crossing; iron post stamped "66 B"-----	66.714
Sumas, 10 feet south of international boundary, west of Seattle & International Ry., at northeast corner of United States immigration building; iron post stamped "48 B"-----	48.310
Sumas, 9.8 feet east of international boundary line monument, in granite boulder, triangulation station "Sumas"; bronze tablet stamped "202 B"-----	202.646

From Hampton west along county road to Meridian road.

Lynden, in wall of Lynden Bank building, between large front window and main entrance, 4 feet above sidewalk; aluminum tablet stamped "95 B"-----	95.046
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From Clearbrook west along county road to Meridian road.

	Feet.
Northwood, T. 40 N., R. 3 E., secs. 3 and 10, 15 feet north and 30 feet east of quarter-section corner, southeast angle of crossroads; iron post stamped "132 B"-----	132. 798

From Bellingham east along Northern Pacific Ry. to Woodlawn.

Silver Beach, 25 feet north of track, 2 feet east of northeast corner of station; iron post stamped "313"-----	313. 476
Woodlawn, 40 feet north of entrance to Iverson place, 75 feet east of track, 100 feet east of edge of lake, 250 feet north of signboard; iron post stamped "319 B"-----	320. 019

From Deming west along highway to Goshen.

Nugent, 650 feet northeast of bridge, 53 feet southeast of entrance to Nugent Bridge saloon, in south angle of forks of road; iron post stamped "156 B"-----	156. 286
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BELLINGHAM QUADRANGLE.

[Latitude 48° 30'-49°; longitude 122°-122° 30'.]

From Sumas southeast along Bellingham Bay & British Columbia R. R. to Maple Falls, thence by highway through Lemolo to Columbia.

Lamberton, at road crossing, northeast of station; iron post stamped "43 B"-----	43. 178
Columbia, 150 feet southeast of station; iron post stamped "546 B"-----	546. 490
Kendall, 250 feet east of station, 200 feet north of track at road crossing, 40 feet west of post office; iron post stamped "446 B"-----	446. 680
Maple Falls, in yard 120 feet northeast of northeast corner of schoolhouse; iron post stamped "665 B"-----	665. 301
Silver Lake, 300 feet east of road forks, 3 feet north of gate to Gerdrum house; iron post stamped "818 B"-----	818. 496
Warner schoolhouse, 1,650 feet west of, 2 feet west of fence corner, 1 foot north of fence, 200 feet west of trail to Lemolo post office; iron post stamped "547 B"-----	547. 107

From Woodlawn south along Northern Pacific Ry. to Wickersham, thence north to Deming, thence northeast along highway to Kendall.

Sunnyside, 150 feet west of milepost 9, 30 feet east of station, 10 feet south of track, in top of granite rock; aluminum tablet stamped "312 B"-----	312. 524
Blue Canyon, 800 feet east of coal company's bumper, 30 feet south of track, 1,200 feet east of milepost 5, in 6 by 6 by 3 foot sandstone rock; aluminum tablet stamped "318 B"-----	318. 177
Wickersham, 2.0 miles northwest of, 185 feet west of shingle mill switch stand, 2,400 feet east of milepost 3; iron post stamped "356 B"-----	357. 096
Wickersham, at Wickersham Avenue crossing, 2.5 feet north of telegraph pole, east of track; iron post stamped "312 B"-----	312. 909
Saxon switch, 0.3 mile north of, 0.25 mile north of milepost 100, southeast angle of road crossing, near fence; iron post stamped "319 B"-----	319. 941
Green spur, 970 feet south of switch stand, west of track and south of road crossing, 950 feet south of milepost 104; iron post stamped "268 B"-----	268. 758

	Feet.
Van Zandt, at southeast corner of schoolhouse yard; iron post stamped "239 B"-----	239. 182
Deming, 200 feet west of Deming livery stable, 500 feet west of station, north of road and track, at southeast corner of schoolhouse yard; iron post stamped "202 B"-----	202. 686
Welcome schoolhouse, 2.0 miles north of, 1 foot west of fence, east side of road, 10 feet south of blazed cottonwood tree, T. 39 N., R. 5 E., secs. 15 and 22, on section line; iron post stamped "332 B"---	332. 447

From Fairhaven along Great Northern Ry. to Belleville.

Chuckanut Creek, 0.25 mile west of, south of track, 275 feet west of bridge over slough, 500 feet west of Neff green house; iron post stamped "186 B"-----	186. 590
A. C. Milne house, 2.3 miles northwest of, 625 feet east of road to American lumber and shingle mill, 1,610 feet east of bridge over Chuckanut Creek, south of road; iron post stamped "554 B"-----	554. 789
A. C. Milne house, 1.1 miles southeast of, southwest of Lake Samish, 1,450 feet east of Manly shingle mill, 10 feet east of bridge over small stream; iron post stamped "343 B"-----	343. 591
Alger, 725 feet east of track, 260 feet south of Clear Creek bridge, 50 feet north of road forks; iron post stamped "270 B"-----	270. 262
Belfast, 1.8 miles north of, 28 feet east of track, 24 feet west of Friday Creek, 120 feet south of section tool house; iron post stamped "123 B"-----	124. 016
Moody, 90 feet west of store, 45 feet west of track, 340 feet south of trestle 5, over Samish River; iron post stamped "53 B"-----	53. 578
Belleville, 75 feet north of track, west of main street, 125 feet west of station; iron post stamped "29 B"-----	30. 058

From Fairhaven along Great Northern Ry. to Belleville.

Chuckanut switch, 2,750 feet south of Chuckanut salmon cannery, 135 feet south of watchman's cabin, 540 feet north of station, west of track; iron post stamped "44 B"-----	44. 273
Samish, 2.6 miles north of, 300 feet north of milepost 86, 60 feet north of emergency rail stand, 15 feet east of track, in top of flat sandstone rock; aluminum tablet stamped "38 B"-----	39. 025
Samish switch, 18 feet east of, east of track, 930 feet south of trestle 18, 60 feet south of house; iron post stamped "10 B"-----	10. 467
Bow, west of track, opposite station, 420 feet north of road crossing; iron post stamped "14 B"-----	14. 613
Bow, 2.2 miles south of, west of track, 250 feet west of E. Shumway's gate, in southwest angle of road crossing; iron post stamped "19 B"-----	19. 668

From Belleville northeast along highway to Prairie.

Moody's abandoned logging camp, 1.0 mile northeast of, Samish River bridge, in line of fence north of road opposite old blacksmith shop; iron post stamped "142 B"-----	142. 347
Prairie schoolhouse, 0.25 mile south of, northeast angle of crossroads, north of fence corner, 1,500 feet east of Samish River bridge, 2 feet north of fence corner; iron post stamped "205 B"-----	205. 569

From Wickersham south along Northern Pacific Ry. to Woolley.

	Feet.
Kane switch, 20 feet south of signboard, west of track, 10 feet south of northeast corner of Kane shingle mill office; iron post stamped "289 B"-----	289. 633 .
Thornwood, 75 feet south of station, west of track, 1,000 feet north of Kane water tank; iron post stamped "361 B"-----	362. 127
Sedro Woolley, 2.6 miles north of, 390 feet south of trestle No. 52, 450 feet north of milepost 88; iron post stamped "150 B"-----	151. 220 .

From Woolley east along Great Northern Ry. to Lyman, thence south along highway to Lyman Ferry.

Minkler & Son's shingle mill, 700 feet west of bridge 37, 125 feet east of switch, south of track, between platform and cook house; iron post stamped "65 T. U. L."-----	63. 828
Lyman, 61.6 feet north of track and about 15 feet east of crossing at station, north side of wagon road; iron post stamped "96 Wash 1909" (probably destroyed by railroad company)-----	95. 497
Lyman, 1.0 mile east of, front of T road south of north end of bridge; iron post stamped "80 Wash 1909"-----	80. 123
Lyman Ferry, 450 feet south of, south side of main road at junction of road to ferry; iron post stamped "99 Wash 1909"-----	99. 244

Eatonville, Mount Rainier, and Mount St. Helens quadrangles.**LEWIS AND PIERCE COUNTIES.**

The elevations in the following list were determined by primary leveling extended from Tacoma. The double-rodged line reported upon in Bulletin 457, pages 85 to 87, from Kapowsin to McClure Rock was joined at Elbe by a line leveled twice from Silver Creek, and the portion Elbe to McClure Rock was releveled. A mean was adopted after applying rod corrections.

The leveling in Mount St. Helens quadrangle was done in 1913 by E. M. Bandli and in Eatonville and Mount Rainier quadrangles in 1910 and 1913 by E. M. Bandli.

EATONVILLE QUADRANGLE.

[Latitude 46° 30'–47°; longitude 122°–122° 30'.]

At Cinebar.

	Feet.
Silver Creek, 7.1 miles northeast of, 27 feet southeast of road intersection, on tree stump; copper nail marked "883.7"-----	883. 74
Cinebar, 66 feet northeast of corner of school yard, in northeast corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 46, 910"-----	910. 074
Cinebar, 0.4 mile west from schoolhouse, 27 feet southeast of road intersection, in tree stump; copper nail marked "883.7"-----	883. 76

From point near Mossyrock east along highway to Riffe (leveled twice).

Mossyrock, 0.9 mile west of, 18 feet south of road, in base of telephone pole; copper nail marked "617.7"-----	616. 75
Mossyrock, 20 feet south of road, near fence, 200 feet southwest of post office; iron post stamped "668"-----	666. 918

	Feet.
Mossyrock, 0.9 mile east of, 18 feet south of road, 25 feet southwest of culvert, in base of telephone pole; copper nail marked "700.4"-----	699.49
Mossyrock, 1.9 miles east of, 15 feet south of road and 30 feet east of private road intersection, in telephone pole; copper nail marked "738.673"-----	737.82
Mossyrock, 2.9 miles east of, 100 yards southeast of Y road intersection, 6 feet north of flagpole in yard of Richland school, district 206, ward 8; iron post stamped "793"-----	792.517
Riffe, 2.8 miles west of, 20 feet south of road, in root of 2-foot maple tree; copper nail marked "789.2"-----	788.35
Riffe, 2 miles west of, 50 feet northeast of bridge, 8 feet north of road, in top of 4-foot cedar stump; copper nail marked "563.5"-----	562.62
Riffe, 1.1 miles west of, 5 feet north of road, in top of 3½-foot cedar stump; copper nail marked "506.7"-----	505.85
Riffe, 220 feet west of post office, 25 feet north of road, 30 feet west of road intersection; iron post stamped "534"-----	532.889
From Riffe northeast along highway to Morton, thence southeast to Kosmos (part of circuit).	
Riffe, 0.9 mile west of, 10 feet south of road, in root of 10-inch maple tree; copper nail marked "565.2"-----	564.35
Riffe, 2.1 miles north of, 2 feet from west end of bridge, on north side of road, in root of hemlock tree; copper nail marked "879.4"-----	878.60
Morton, 5.3 miles west of, on west edge of road, in root of 6-foot cedar tree; copper nail marked "1173.8"-----	1,173.09
Morton, 4.4 miles southwest of, at summit, 15 feet west of school and 3 feet north of flagpole, 100 feet south of road; iron post stamped "1329"-----	1,328.174
Morton, 3.2 miles southwest of, 4 feet northwest of road, on small hill, in bottom of telephone pole; copper nail marked "1045.8"-----	1,045.03
Morton, 1.9 miles southwest of, 50 feet west of Mrs. Stout's front gate, west of road, in bottom of telephone pole; copper nail marked "1005.9"-----	1,005.18
Morton, 1 mile southwest of, 6 feet east of T road intersection, southeast of Morton cemetery, in root of B. T. 14 S. No. 32; copper nail marked "929.5"-----	928.76
Morton, 18 feet south of railroad and street intersection, 3 feet east of telephone pole, 100 yards east of Morton Hotel; iron post stamped "945.3"-----	944.652
Morton, 1.2 miles east of, 10 feet south of road, 150 feet northeast of residence, in base of telephone pole; copper nail marked "972.5"-----	971.82
Morton, 2.3 miles south of, on northeast edge of road, in root of 18-inch fir tree; copper nail marked "997.5"-----	996.83
Morton, 2.6 miles south of, in angle of T road intersection, in corner of F. Harper's place, 100 feet southwest from house; iron post stamped "988"-----	987.132
Morton, 3.7 miles south of, on west edge of road, in root of 18-inch alder tree; copper nail marked "1020.3"-----	1,019.62
Morton, 4.4 miles south of, on west edge of road, in root of 4.5-foot hemlock tree, 100 feet south of Y road; copper nail marked "1050.9"-----	1,050.19

	Feet.
Morton, 5.2 miles south of, on south edge of road, in root of 5-foot cedar tree; copper nail marked "1027.9"-----	1, 027. 27
Morton, 6 miles south of, on northwest edge of road, in root of 5.5-foot fir tree; copper nail marked "965.2"-----	964. 54
From Morton northeast along Tacoma Eastern R. R. and highway to Park Junction (leveled twice).	
Morton, 1 mile north of, 15 feet east of track, in root of 4-foot hemlock tree; copper nail marked "958.5"-----	957. 80
Morton, 2.1 miles north of, 15 feet west of road and track intersection, in bottom of railroad crossing sign; copper nail marked "1009.1"-----	1, 008. 49
Morton, 3 miles north of, 840 feet north of Lindburg, 15 feet south of west end of bridge GG 98; iron post stamped "1052"-----	1, 051. 378
Morton, 3.3 miles north of, 10 feet south of track, in root of 2-foot hemlock stump; copper nail marked "1082.9"-----	1, 082. 27
Morton, 4.4 miles north of, at Inland stop, 3 feet west of track, on pier of bridge GG 96 at south end; copper nail marked "1209.1"-----	1, 208. 48
Morton, 5.6 miles north of, 3 feet northwest of track, on top of sixth pier from southwest end of bridge GG 94; copper nail marked "1345.7"-----	1, 345. 14
Mineral, 7.2 miles south of, 15 feet southwest of center line at road crossing, 45 feet west of bridge GG 92; iron post stamped "1475"-----	1, 474. 896
Mineral, 6.5 miles southwest of, 3 feet northwest of track, on stringer of bridge GG 88; copper nail marked "1541.8"-----	1, 541. 27
Mineral, 5.6 miles southwest of, 80 feet southwest of cook house, on Peterman's spur, 7 feet west of track and about 4 feet northeast of telephone pole; iron post stamped "1636"-----	1, 635. 555
Mineral, 5.1 miles southwest of, 3 feet east of track, in top of low 16-inch stump, in circle of paint; copper nail marked "1664.8"-----	1, 664. 36
Mineral, 4.1 miles southwest of, 15 feet west of track, 4 feet south of telephone pole, 60 feet south of Pennsylvania Coal Co.'s office; iron post stamped "1681"-----	1, 680. 546
Mineral, 3.1 miles south of, 6 feet west of track, on timber pier of bridge GG 82; copper nail marked "1595.9"-----	1, 595. 46
Mineral, 2 miles southwest of, at T-road crossing, 35 feet west of track near sawmill, in root of 2.5-foot fir stump; copper nail marked "1537.8"-----	1, 537. 37
Mineral, 1.2 miles southwest of, 10 feet west of track, 12 feet north of road, in root of 2.5-foot hemlock tree; copper nail marked "1467.7"-----	1, 467. 32
Mineral, 15 feet south of track, 50 feet southeast of station, 3 feet west of crossing sign opposite water tank; iron post stamped "1439"-----	1, 438. 934
Mineral, 1 mile west of, 15 feet east of track, in top of 16-inch hemlock stump; copper nail in circle of paint, marked "1373.1"-----	1, 372. 63
Park Junction, 1.9 miles east of, 6 feet from crossing sign and 6 feet from track, in top of pile near river; copper nail marked "1333.3"-----	1, 332. 88
Park Junction, 0.3 mile south of, 3 feet north of telephone pole No. 0-31, 30 feet south of road, 30 feet northeast of Nisqually River railroad bridge, 18 feet east of track; iron post stamped "1337"-----	1, 336. 033

From Kapowsin south and east along Tacoma Eastern R. R. to Elbe (double-rodde line).

	Feet.
Electron, 0.5 mile west of, 20 feet east of track, 9 feet south of road, 4 feet west of corner between secs. 5 and 32, Tps. 17 and 18 N., R. 5 E; iron post stamped "583"-----	582. 768
Kapowsin, in northeast corner of intersection of Trewella Avenue and street opposite Presbyterian Church, 0.5 foot west of northeast corner of fence post, 0.5 foot north of corner; iron post stamped "630"-----	629. 610
Holz, 18 feet northeast of station, 13 feet northwest of track; iron post stamped "564"-----	563. 530
Holz, 1.3 miles southwest of, 15 feet southwest of private road, 2 feet southwest of railroad signpost, 10 feet southeast of track; iron post stamped "554"-----	553. 938
Eatonville, 20 feet north of road crossing at station, 18 feet northwest of railroad, 2 feet east of railroad crossing signpost; iron post stamped "800"-----	800. 179
Lagrande, 18 feet east of railroad, 15 feet north of road in front of post office and Hotel Lagrande; aluminum tablet stamped "942"-----	941. 554
Lagrande, 3.2 miles southeast of, west of track, in stump; copper nail-----	994. 64
Lagrande, 3.6 miles southeast of, southwest end of trestle; copper nail-----	1, 014. 16
Alder, 35 feet west of first road crossing west of station, 18 feet south of railroad, 2 feet northwest of first telegraph pole west of road crossing at station; iron post stamped "1148"-----	1, 147. 387
Alder, 1 mile east of, 4 feet south of track, in stump; copper nail-----	1, 246. 02
Alder, 2.2 miles east of, 9 feet south of track, in large stump; copper nail marked "1266.1"-----	1, 265. 73
Alder, 3.3 miles east of, 10 feet north of track, 15 feet west of road at crossing, 120 feet south of new county road; iron post stamped "1207"-----	1, 206. 873
Alder, 4 miles east of, 4 feet northeast of track, in stump at curve; copper nail-----	1, 174. 02
Alder, 5.4 miles east of, at road crossing, 50 feet northeast of track, 15 feet north of road, in stump; copper nail marked "1173.3"-----	1, 172. 95
Elbe, 50 feet east of track, 18 feet north of road crossing just north of station, 2 feet north of railroad signpost; iron post stamped "1210"-----	1, 210. 077

From Elbe east along Tacoma Eastern R. R. to Ashford (from a double-rodde line redetermined by a single line).

Elbe, 1 mile east of, 30 feet north of track, in root of 3.5-foot fir stump; copper nail-----	1, 363. 34
Park Junction, 0.25 mile east of, 20 feet east of switch, 10 feet north of track, in root of cedar stump; iron spike marked "1344.1"-----	1, 343. 69
Elbe, 3.6 miles east of, 15 feet north of track, in top of stump; copper nail marked "1386.2"-----	1, 385. 84
Elbe, 4.5 miles southeast of, 15 feet south of track, 3 feet northwest of telegraph pole near logging camp; iron post stamped "1439"-----	1, 438. 254
Elbe, 5.6 miles east of, 6 feet south of track, in top of stump; copper nail marked "1514.2"-----	1, 513. 79

	Feet.
Ashford, 1.5 miles west of, 10 feet northwest of track, in top of 3-foot black stump; copper nail marked "1599.2"-----	1,597.28
Ashford, 0.25 mile west of, at road crossing, in stump; copper nail marked "1737.58"-----	1,737.11
Ashford, 12 feet south by 20 feet west of T-road intersection to south; iron post stamped "1771"-----	1,770.869

MOUNT RAINIER QUADRANGLE.

[Latitude 46° 30'–47°; longitude 121° 30'–122°.]

From Ashford east along highway to McClure Rock (leveled twice; a double and a single rodged line).

Ashford, 1.5 miles northeast of, along automobile road to Mount Rainier National Park, 6 feet south of road, 100 yards east of log house, in top of 1-foot fir stump; copper nail marked "1840.7"---	1,838.80
Ashford, 2.7 miles northeast of, 20 feet northwest of intersection of Lewiston and National Park roads, 3.5 miles from Mount Rainier National Park entrance; iron post stamped "1839"-----	1,838.621
Ashford, 3.8 miles northeast of, 12 feet west of bridge north of road, 4 feet from road, in stump; copper nail marked "1852.2"-----	1,851.81
Ashford, 4.6 miles northeast of, on south edge of automobile road to Mount Rainier, in bottom of telephone pole; copper nail marked "1887.5"-----	1,885.62
Ashford, 6.4 miles northeast of, at Mount Rainier National Park entrance, at side of flagpole, 36 feet in front of park entrance to building, 15 feet from road entrance to building, 15 feet from road southeast; iron post stamped "2003"-----	2,002.704
Ashford, 7.4 miles northeast of, 1 mile in Mount Rainier National Park, 10 feet north of road, in root of tree; copper nail marked "2106"-----	2,105.20
Ashford, 9 miles from, 4 feet north of road to Longmire Springs, at curve of road opposite railing along south side of road, in ledge of rock; aluminum tablet stamped "2275"-----	2,274.283
Ashford, 9.9 miles from, 10 feet south of road to Longmire Springs, near bridge at Rainier Forks, in large stump; copper nail marked "2378.7"-----	2,378.15
Ashford, 10.5 miles east of, 4 feet south of road, 2.5 miles west of Longmire, in small stump; copper nail marked "2421"-----	2,420.77
Ashford, 11.1 miles from, 20 feet south of road to Longmire Springs, near intersection of old and new roads; iron post stamped "2499"-----	2,498.262
Ashford, 12.1 miles east of, 1 mile from Longmire, 10 feet south of road, in small stump; copper nail marked "2617.7"-----	2,617.10
Longmire Springs, in front of Forester's building, 3 feet west and north of flagpole; iron post stamped "2762"-----	2,761.386
Longmire Springs, 0.4 mile northeast of, 20 feet south of road to Mount Rainier, opposite Indian Henry's trail, in large stump; copper nail marked "2824.3"-----	2,823.89
Longmire Springs, 2 miles northeast of, 100 feet east of Paradise trail, 10 feet southeast of road; iron post stamped "3160"-----	3,159.175
Longmire Springs, 3 miles northeast of, 21 feet west of curve to west, in stump; copper nail marked "3381.9"-----	3,381.42

Feet.

Longmire Springs, 4.2 miles from, on road to Mount Rainier, 6 feet south of road, near bridge at Christine Falls; copper nail marked "3668.4" -----	3, 666. 84
Longmire Springs, 5 miles from, along road to Mount Rainier, at Nisqually Glacier, 60 feet east of road at bridge, in large boulder on north bank of Nisqually River; aluminum tablet stamped "3909" -----	3, 907. 973
Longmire Springs, 8 miles from, 10 feet northwest of road to Mount Rainier, in top of large stump; copper nail marked "4464" -----	4, 463. 43
Nerada Falls, 15 feet south of road, 15 feet southwest of bridge, 3 feet east of two trees at curve of road to east; iron post stamped "4572" -----	4, 571. 701
Reese's camp, 0.8 mile south of, along pony trail, 4 feet south of trail, in root of 12-inch hemlock tree; copper nail marked "4867.302" -----	4, 865. 73
Nerada Falls, 1.3 miles north of, south of road at top of hill where road leaves Paradise Valley; bench mark on stump, marked "5382" -----	5, 381. 09
Reese's camp, 15 feet south of road, 5 feet east of tree nearest road; iron post stamped "5557" -----	5, 556. 877
Reese's camp, 0.8 mile northeast of, along tourist's trail up the mountain, on large rock; circle of paint marked "6316.0" -----	6, 314. 67
McClure Rock, 2 miles from Reese's camp on route to mountain, in top of large rock, near large pile of rock at signal station, on highest ledge, a few rods from edge of rock ledge; aluminum tablet stamped "7385" -----	7, 384. 064

MOUNT ST. HELENS QUADRANGLE.

[Latitude 46°-46° 30'; longitude 122°-122° 30'.]

From Kosmos west along highway to Riffe.

Kosmos, on State road, 18 feet west of road, 45 feet southeast of schoolhouse, 120 feet north of Hopkins's store; iron post stamped "752" -----	751. 470
Kosmos, 1 mile south of, along wagon road, 20 feet southeast of T road intersection, in root of 2-foot fir tree; copper nail marked "677.9" -----	677. 19
Kosmos, 2.1 miles southwest of, along wagon road, 10 feet south of road, in root of 3.8-foot fir tree; copper nail marked "629.6" -----	628. 88
Kosmos, 2.9 miles southwest of, 0.25 mile south of river ferry, 15 feet south of road, 2 feet north of telephone pole, 29.4 feet above surface of water of Cowlitz River, July 31, 1913; iron post stamped "628" -----	627. 690
Kosmos, 4.3 miles southwest of, 30 feet south of Landers Creek, in root of 18-inch cottonwood tree; copper nail marked "592.7" -----	591. 91
Kosmos, 5.5 miles southwest of, on south edge of road, 0.25 mile west of schoolhouse, in root of 2-foot fir tree; copper nail marked "660.4" -----	659. 70
Nesika, 20 feet south of road, in front of G. W. Collins's place, 6 feet east of his gate; iron post stamped "655" -----	653. 875
Riffe, 4.8 miles east of, 15 feet north of road, in root of 18-inch fir tree; copper nail marked "633.0" -----	632. 29
Riffe, 3.9 miles east of, 30 feet north of road, in root of 16-inch fir tree; copper nail marked "624.9" -----	624. 18

	Feet.
Riffe, 3 miles east of, in schoolhouse yard, 1 foot west of southwest corner of Baugh's school (district 206, ward 12); iron post stamped "573" -----	572.004
Riffe, 1.9 miles east of, 12 feet south of road, in Mulligan's front yard, in bottom of telephone pole; copper nail marked "551.6"-----	550.85
Riffe, 1.1 miles east of, 8 feet west of road, in root of 6-foot cedar snag with small cedar tree growing out of its center; copper nail marked "527.6" -----	526.82

Cedar Lake, Snohomish, Sultan, and Tacoma quadrangles.

KING, KITTITAS, AND PIERCE COUNTIES.

The elevations in the following list are based on the Coast and Geodetic Survey precise line.

The leveling was done in cooperation with the State by D. S. Birkett in 1910. The standard bench marks are stamped "Wash" in addition to the figures of elevation. A few bench marks were established in the Tacoma quadrangle in 1910 by E. M. Bandli.

CEDAR LAKE QUADRANGLE.

[Latitude 47°-47° 30'; longitude 121° 30'-122°.]

From point near Kanaskat north along Northern Pacific Ry. to point near Barneston, thence along Chicago, Milwaukee & St. Paul Ry. to point 1 mile east of Rainy Creek.

	Feet.
Kanaskat and Palmer Junction, between, about 50 meters east of milepost 211, at west end of Northern Pacific Ry. bridge over Green River, 0.2 meter from east edge and 0.1 meter from south edge, 1.5 meters from nearest rail, in top of concrete abutment for approach; copper bolt (C. & G. S. B. M.)-----	847.924
Kangley Junction, 50 feet west of Northern Pacific Ry. tracks, 40 feet north of intersection of tracks; spike in 2-foot maple tree----	943.90
Kangley, on Kerriston branch of Northern Pacific Ry., 35 feet north by 50 feet east of railroad station, corner of fence on north side of wagon road crossing railroad; iron post stamped "958 Wash"-----	957.517
Cedar River bridge on Kerriston branch of Northern Pacific Ry., 1.2 miles southwest of, 1.6 miles southwest of Barneston, 10 feet east of track, on top of 2½ by 2½ by 2 foot granite boulder; point marked "U. S. 893 B. M."-----	892.57
Iolanthe siding, 1,000 feet east of east end of, 4.3 miles west of Moncton, east end and on north side of track, in concrete abutment of steel bridge FF 124; aluminum tablet stamped "Prim. Trav. Sta. No. 9, 799, Wash., 1910"-----	798.990
Moncton, 1 mile west of, Chicago, Milwaukee & St. Paul Ry. steel bridge FF 120 over Cedar River, north side of track, 5 inches from north and west edges, in top of concrete abutment; aluminum tablet stamped "920 Wash"-----	920.353
Moncton, 1.3 miles east of, point where county road from North Bend to Cedar Lake crosses the Chicago, Milwaukee & St. Paul Ry. (main line), 20 feet east of road and 30 feet south of railroad track; iron post stamped "1041 Wash"-----	1,041.480

Feet.

Chenge Creek bridge, 2.4 miles west of Garcia (bridge FF 112), east end of, on concrete abutment north side of track, at west end of the long abutment near where the steel structure of the bridge joins on; bronze tablet stamped "1455 Wash"-----	1, 455. 241
Garcia, 740 feet east of station, wall of rock through cut, 15 feet north of track; aluminum tablet (placed nearly vertical) stamped "Prim. Trav. Sta. No. 10, 1889, Wash., 1910"-----	1, 689. 168
Rock Creek, 2.8 miles east of Garcia, west end of filled trestle over creek, at end of cut, 50 feet south of railroad track; iron post stamped "1884 Wash"-----	1, 884. 152
Bandera, 20 feet west of telephone booth (no station house), 30 feet south of track, in knuckle at base of 24-foot cedar stump 6 feet high; copper nail, aluminum tag stamped "2123"-----	2, 123. 46
Hanson Creek bridge (steel) FF 88, 0.6 mile east of Bandera, east end of bridge, in concrete abutment north side of track and at west end, 2 feet from point where steel structure joins on top of concrete; aluminum tablet stamped "2167 Wash"-----	2, 167. 666
From point near Barneston north along Kerriston branch of Northern Pacific Ry. via Kerriston to point 2 miles southeast of Preston.	
Barneston, 3 miles north of, 0.4 mile east of milepost 9, 40 feet west of south end of trestle No. 8; iron post stamped "1074 Wash"-----	1, 073. 733
Taylor, 1.5 miles east of, 5.1 miles north of Barneston, junction of old skid road (trail to Taylor) with Northern Pacific Ry., 30 feet west of railroad, south side of skid road; iron post stamped "1327 Wash"-----	1, 327. 086
Kerriston, 0.3 mile south of station, 420 feet south of point where switchback of Northwest Lumber Co.'s logging railroad leaves the Northern Pacific Ry., 10 feet west of Northern Pacific tracks, 25 feet east of logging railroad, in knuckle at base of 5-foot cedar stump 10 feet high; copper nail, aluminum tag stamped "1374"-----	1, 374. 00
Kerriston, 650 feet north of Northwest Lumber Co.'s mill, 70 feet south of head office, 100 feet east of logging railroad, 25 feet north-east of blacksmith shop, in niche on granite boulder 15 feet high and 18 feet in diameter, 3 feet above ground; aluminum tablet stamped "1214 Wash"-----	1, 213. 832
Kerriston, 2.8 miles north of, 15 feet west of Northern Pacific Ry., at base of 34-foot cedar stump 10 feet high; spike, aluminum tag stamped "1094"-----	1, 093. 87
Kerriston, 3.3 miles north of Northwest Lumber Co.'s mill, 250 feet north of junction of logging road with Northern Pacific Ry., 25 feet west of Northern Pacific tracks, 18 feet east of logging tracks; iron post stamped "1045 Wash"-----	1, 044. 778
Kerriston, 4 miles northwest of, point where logging railroad divides, one spur leads to northwest and main line turns to south to logging camp, 30 feet west and 20 feet north of junction, 120 feet west of tool house, in base of hemlock tree; spike, aluminum tag stamped "936"-----	935. 95
From point 1.5 miles east of Taylor west along skid road and Columbia & Puget Sound R. R. to point 1.4 miles west of Hobart.	
Taylor, 50 feet east of Columbia & Puget Sound R. R. station, 50 feet north of railroad, 5 feet west of fence about hotel lawn; iron post stamped "1159 Wash"-----	1, 158. 666

	Feet.
Walsh, southeast corner of school yard, 50 feet east of Columbia & Puget Sound R. R., 50 feet north of county road; iron post stamped "767 Wash"-----	766.998
Hobart, 90 feet west of Columbia & Puget Sound R. R. station, 40 feet north of saloon, 45 feet south of railroad track, west edge of county road; iron post stamped "549 Wash"-----	549.319
From Henrys switch on Northern Pacific Ry. to point about 1 mile west of Ravensdale.	
Henrys switch, 900 feet west of, 2 miles west of Ravensdale, in top of concrete pier for steel bridge of Columbia & Puget Sound R. R. over Northern Pacific Ry., south side of latter and west side of former tracks, northwest corner of pier; point marked by circle inclosing cross and "U. S. 564 B. M."-----	564.65
Ravensdale, 1.9 kilometers west of, north side of Northern Pacific Ry., in top of concrete arch of culvert, at northeast corner; copper bolt (C. & G. S. B. M.)-----	576.586
From point 1.3 miles east of Moncton along road to Cedar Lake and return (checked spur line).	
Moncton, 1 mile east of, on wagon road from Monckton to new dam site, Cedar Lake, junction with North Bend road, 90 feet west of, north side of road, in base of hemlock tree, nail marked with ring of red paint; aluminum tag stamped "1237" (city of Seattle bench mark)-----	1,237.02
Cedar Lake, 150 feet east of north side of new dam site, 50 feet south of wagon road from new dam to old dam, 65 feet east of bunk house 1, embedded in concrete block, a truncated pyramid in shape, 4 feet square at base and 1 foot square at top, 4 feet high, buried level with surface of ground, post extends 1 foot above concrete; iron post stamped "1605"-----	1,604.884
Cedar Lake; surface of water November 11, 1910-----	1,558.2

SULTAN QUADRANGLE.

[Latitude 47° 30'–48°; longitude 121° 30'–122°.]

From point 2 miles southeast of Preston west along Northern Pacific Ry. to Grand Ridge coal mine.	
Preston Lumber Co.'s upper mill, northwest corner of school yard (district 90), 70 feet north by 25 feet west of schoolhouse, in notch at base of 3½-foot cedar stump 8 feet high; copper nail, aluminum tag stamped "595"-----	595.23
Preston Lumber Co.'s upper mill (2 miles southeast of town of Preston), southeast corner of school yard, 60 feet south of schoolhouse, 5 feet west of school fence (district 90); iron post stamped "597 Wash"-----	596.479
Preston, 500 feet east of Northern Pacific Ry. station, east side of road crossing railroad track, 30 feet south of track, northwest corner of shipping shed for Preston Lumber Co.; iron post stamped "508 Wash"-----	507.717
18249°—Bull. 557—14—8	

	Feet.
High Point, 50 feet west of county road crossing, 50 feet south of railroad, 7 feet north of northeast corner of post office; iron post stamped "487 Wash"-----	487. 103

SNOHOMISH QUADRANGLE.

[Latitude 47° 30'–48°; longitude 122°–122° 30'.]

From Grand Ridge coal mine along Northern Pacific Ry. to Issaquah, thence southwest along wagon road to point about 5 miles southwest of Issaquah.

Issaquah, 360 feet south of Northern Pacific Ry. station, 45 feet east of railroad, north side of Mill Street, 5 feet west of southeast corner of feed stable; iron post stamped "97 Wash"-----	96. 522
Issaquah, in front of Northern Pacific Ry. station; top of rail-----	96. 9
Issaquah, 1.5 miles northwest of Renton-Snoqualmie road, 0.9 mile west of Northern Pacific Ry., north side of road, 200 feet west of schoolhouse, at base of cedar stump 6 feet in diameter and 8 feet high; copper nail in notch, aluminum tag stamped "76"-----	74. 26
Superior Mines, 3.8 miles southwest of Issaquah, west side of road, 10 feet north of northeast corner of mining company barn; iron post stamped "366"-----	365. 377
Issaquah, 4.9 miles southwest of, 0.5 mile south of shingle mill, 10 feet west of road, at base of 1½-foot cedar stump 2 feet high; copper nail in notch, aluminum tag stamped "387"-----	386. 89

TACOMA QUADRANGLE.

[Latitude 47°–47° 30'; longitude 122°–122° 30'.]

From point 5 miles southwest of Issaquah along wagon road to Renton, thence west along Northern Pacific Ry. to Black River Junction.

Issaquah, 6 miles southwest of, 6.5 miles northeast of Renton, point where road forks, one branch leading to "Cedar Mountain," and the other to Issaquah, 0.5 mile east of Michael Walsh's house, 100 feet east of road intersection, 25 feet from each road and in forks, at base of 2-foot cedar stump 8 feet high, copper nail in notch; aluminum tag stamped "336"-----	335. 99
T. 23 N., R. 5 E., in NE. ¼ sec. 12, 5.4 miles northeast of Renton city hall, in southwest corner of May Creek school yard, 40 feet south by 40 feet west of southwest corner of schoolhouse, 60 feet north of county road; iron post stamped "328 Wash"-----	328. 054
Renton, 4.8 miles east of, on Issaquah road, 30 feet west of T in roads where Issaquah road leads north to May Creek schoolhouse 1 mile distant; projection on top of 8 by 5 by 8 foot granite boulder marked with red paint "U. S. 442 B. M."-----	441. 71
Renton, 2.5 miles east of, northeast corner of sec. 16, T. 23 N., R. 5 E., south side of road, in line with high-power transmission line, 200 feet southwest of slaughterhouse; iron post stamped "401 Wash"-----	400. 165
T. 23 N., R. 5 E., southwest corner of sec. 9, 1.5 miles east of Renton, point where road joins Issaquah road, 175 feet southwest of section corner, 20 feet south of road, at base of 2-foot cedar stump 4 feet high; copper nail in notch, aluminum tag stamped "268"-----	267. 19

	Feet.
Renton, 0.7 mile east of, at T in roads where road turns south to Elliot, north side of road, 40 feet west of signboard "Seattle 14.5 miles; Snoqualmie Falls 28 miles," at base of 5-foot cedar stump 10 feet high; copper nail in notch, aluminum tag stamped "41"-----	43. 57
Renton, city fire hall, concrete approach to hose-cart stalls at south end, 15 feet west of sidewalk, 1 foot east of building and 0.5 foot from south edge of approach; aluminum tablet stamped "40 Wash"-----	39. 548
Black River, opposite Northern Pacific Ry. station, 11.6 meters east of nearest Columbia & Puget Sound R. R. rail, 1.92 meters west of right of way fence; bottom of square hole cut in top of granite post; marked "U. S. $\square$ B. M." (C. & G. S. b. m.)-----	20. 540
From point 1.4 miles west of Hebart along Columbia & Puget Sound R. R. to Maple Valley, thence south along same railroad to point near Summit.	
Maple Valley, 300 feet east of Columbia & Puget Sound R. R. station, 45 feet north of Black Diamond branch of same railroad, 30 feet east of county road, 5 feet south of a saloon; iron post stamped "343 Wash"-----	343. 125
Wilderness (2 miles east of Maple Valley), 60 feet east of station platform, 50 feet south of railroad, just south of road past station; iron post stamped "475 Wash"-----	475. 135
Summit (4 miles southeast of Maple Valley), 20 feet south of old station platform, 45 feet west of railroad, near fence, 16 feet south of road crossing railroad; iron post stamped "565 Wash"-----	565. 180
From Orting south along logging railroad to Kapowsin.	
NOTE.—The following bench marks were established by E. M. Bandli in 1910 in connection with leveling in the Eatonville and Mount Rainier quadrangles. The work was not done in cooperation.	
Orting, 150 feet west of water tank, 34.2 feet from track on south side, 3 feet west of telegraph pole, 53 feet west of Bridge Street; iron post stamped "198 T"-----	198. 088
Orting, 2.5 miles southeast of, about 20 feet east of track, 5 feet south by 1 foot west of northwest corner of fence at private road crossing; iron post stamped "281"-----	281. 303
Orting, 5.9 miles southeast of, 40 feet west of Northern Pacific Ry. track, 2 feet east of fence, in front of Gipple's house, 10 feet south of gate to house; iron post stamped "420"-----	419. 699
Orting, 7.9 miles southeast of, 40 feet south of railroad, in base of 5-foot stump painted "544.7 B. M."; copper nail-----	544. 74
Tps. 17 and 18 N., R. 5 E., 4 feet west of corner of secs. 5 and 32, 8.7 miles southeast of Orting, 0.5 mile west of Electron, 9 feet south of road, 20 feet east of railroad; iron post stamped "583"-----	582. 858

Fort Simcoe and Mount Adams quadrangles.

Klickitat and Yakima Counties.

The elevations in the following list are based upon an iron post at Parker siding stamped "937 T" on a double primary-level line of the Geological Survey run in 1898 along the Northern Pacific Ry.

and later determined by the Coast and Geodetic Survey transcontinental level party. The elevation of this bench mark is now accepted as 937.835 feet.

The leveling was done in 1903 by C. E. Hill and R. B. Shaw.

FORT SIMCOE QUADRANGLE.

[Latitude 46°-46° 30'; longitude 120° 30'-121°.]

From Parker siding along county road to Fort Simcoe.

	Feet.
Parker siding, 100 feet west of cattle guard of Northern Pacific Ry., 100 feet north of intersection of Toppenish and Fort Simcoe roads; iron post stamped "937 T"-----	937.835
Parker siding, 3 miles southwest of, 6 feet south of road; iron post stamped "923 T"-----	923.866
Parker siding, 6 miles southwest of, 8 feet south of road; iron post stamped "912 T"-----	912.683
Parker siding, 9 miles southwest of, in road, between two wagon tracks; iron post stamped "887 T"-----	887.783
Bur Lake, 200 feet north of, 6 feet south of road, at turn in fence; iron post stamped "844 T"-----	844.608
Bur Lake; water level, Apr. 14, 1903-----	839
Luke ranch, corner of fence 10 feet north of road; iron post stamped "892 T"-----	892.272
Luke ranch, 3 miles southwest of, 10 feet south of road at fence corner; iron post stamped "988 T"-----	988.526
Simcoe Creek; water level under bridge, Apr. 20, 1903-----	991.76
Simcoe Creek bridge, 2 miles southwest of, at forks of road, 30 feet west of fence corner; iron post stamped "1075 T"-----	1,075.625
Fort Simcoe, in yard of Indian agent's residence, at northeast corner of fence; iron post stamped "1427 T"-----	1,427.619

From Fort Simcoe along county road and trail to Bush Creek.

Abraham Lincoln's ditch, at road crossing; water level, Apr. 27, 1903-----	1,296
Harbaugh ranch, 1.3 miles south of, 60 feet south of bridge over Toppenish River, in forks of road; iron post stamped "1312 T"-----	1,313.066
Bridge over Toppenish River, 5 miles south of, 150 feet east of edge of first pine timber, 10 feet north of road; iron post stamped "2716 T"-----	2,716.674
Reservation sawmill (abandoned), 0.6 mile southwest of, 4 feet west of road; iron post stamped "3077 T"-----	3,077.936
Reservation boundary, 1.9 miles southwest of, in forks of road to blockhouse and Hopper mill, 8 feet north of, bearing signboard; iron post stamped "3416 T"-----	3,417.014
Bush Creek, at road crossing; water surface, May 12, 1903-----	3,078.1

From Fort Simcoe along county road and trail to Rattlesnake Ridge.

Fort Simcoe, 3.4 miles north of, 60 feet west of road, on summit; iron post stamped "1437 T"-----	1,437.573
Simcoe Creek, at road crossing; water surface, May 25, 1903-----	1,236.99

	Feet.
Sam Abraham house, 15 feet southwest of southwest corner of, 7 feet west of road, at turn; iron post stamped "1351 T"-----	1,351.537
Tzapass Creek ford, 0.3 mile northwest of, 450 feet north of Tzapass Creek, 110 feet south of road, on small road 60 feet in width; iron post stamped "1615 T"-----	1,615.615
Ideat Creek, 1 mile west of mouth of, 100 feet south of trail up ridge, on scab rock slope, small mound 80 feet in diameter; iron post stamped "2580 T"-----	2,580.648

NOTE.—The following are United States Reclamation Service bench marks in Tps. 10 and 11 N., R. 18 E.:

T. 10 N., R. 18 E., northeast corner of sec. 22; nail in fence corner post-----	786.1
T. 10 N., R. 18 E., northeast corner of sec. 22, 1 foot south of fence, 6 feet east of apex of jog to west in north-south fence; iron post stamped "785"-----	786.174
T. 10 N., R. 18 E., northeast corner of sec. 15 (Castile's bench mark 794.29)-----	793.9
T. 10 N., R. 18 E., northeast corner of sec. 10 (Castile's bench mark 795.94)-----	796.9
T. 10 N., R. 18 E., northeast corner of sec. 21-----	796.4
T. 10 N., R. 18 E., quarter corner east side of sec. 16-----	794.8
T. 10 N., R. 18 E., northeast corner of sec 4; iron post stamped "808"-----	809.023
T. 11 N., R. 18 E., northeast corner of sec. 21; iron post stamped "868"-----	869.222
T. 12 N., R. 18 E., southeast closing corner of sec. 33; iron post stamped "970"-----	971.520

MOUNT ADAMS QUADRANGLE.

[Latitude 46°-46° 30'; longitude 121°-121° 30'.]

From Bush Creek west to Parrot's Bridge.

Hopper mill, fork road 7 miles north of, 72 feet south of small stream flowing into White Creek, 12 feet south of road; iron post stamped "2884 T"-----	2,884.989
White Creek ford, 90 feet west of, 7 feet south of road; iron post stamped "2554 T"-----	2,554.695
White Creek ford, 3 miles west of, 1,600 feet southwest of open marsh, 15 feet south of road; iron post stamped "2693 T"-----	2,693.644
Parrot ranch, 4 miles northeast of, 50 feet northeast of junction of Parrot's road and new country road; iron post stamped "2217 T"-----	2,217.569
Trout Creek, at road crossing; water surface, Aug. 27, 1903-----	1,868.96
Parrot ranch, just outside of yard at northwest corner; iron post stamped "1757 T"-----	1,757.627
Bear Creek, at road; water level, Aug. 26, 1903-----	1,890.04
Klickitat River, under Parrot's cable sheep bridge; water surface, August 24, 1903-----	1,653.76
Bacon Creek, 0.7 mile northwest of, 100 feet southeast of Parrot's cable sheep bridge, 4 feet north of trail, in basalt outcrop on top of south bank of river; bronze tablet stamped "1741 T"-----	1,741.484

From Rattlesnake Ridge southwest and south to Glenwood.

	Feet.
T. 11 N., R. 14 E., sec. 24, on Rattlesnake Ridge, 5 miles west of mouth of Idleat Creek, in outcrop bedrock 2 feet square and 1 foot high; bronze tablet stamped "4449 T"-----	4, 449. 769
T. 11 N., R. 14 E., sec. 32 (unsurveyed section), Piscoe Creek crossing, 0.3 mile west of, 10 feet south of trail, 450 feet west of creek; iron post stamped "4669 T"-----	4, 669. 598
T. 10 N., R. 13 E., about sec. 4 (unsurveyed section), Piscoe meadows, 6.1 miles west of, 30 feet west of Little Klickitat River, 300 feet east of Big Klickitat River, 2 feet east of trail up Big Klickitat River, on point of ridge; iron post stamped "3368 T"-----	3, 368. 622
Little Klickitat River, at point of ridge; water surface, July 2, 1903-----	3, 354. 03

From mouth of Little Klickitat River via trail down Klickitat River to Glenwood.

Klickitat River, north of mouth of Piscoe Creek, at trail, just above thicket; water surface, July 6, 1903-----	3, 235. 66
T. 10 N., R. 13 E., about sec. 20 (unsurveyed section), Little Klickitat River, 3.9 miles south of mouth, 70 feet northwest of Klickitat River, 250 feet from small creek, on rocky point; iron post stamped "3189 T"-----	3, 189. 666
T. 9 N., R. 12 E., sec. 1, Corral Creek, 100 feet north of, 40 feet east of Fish Lake trail, 10 feet west of trail up Klickitat River; iron post stamped "2895 T"-----	2, 895. 511
Soda Spring, 10 feet west of, 10 feet south of trail; iron post stamped "2680 T"-----	2, 681. 756
T. 8 N., R. 12 E., sec. 21, Big Muddy Ford, 1 mile east of, on summit of ridge between Big Muddy and Cunningham creeks, 5 feet southeast of trail, in large flat boulder; bronze tablet stamped "2958 T"-----	2, 958. 930
Big Muddy Creek, under bridge; water surface, Aug. 1, 1903-----	2, 959. 08
T. 7 N., R. 12 E., sec. 3, 0.5 mile south of mouth of Big Muddy Creek, 15 feet east of trail, 0.3 mile north of old log cabin; iron post stamped "2277 T"-----	2, 277. 796
T. 7 N., R. 12 E., NW. $\frac{1}{4}$ sec. 35, 1.7 miles south of Bacon Creek, 300 feet southeast of two old cabins, at junction of two trails; iron post stamped "2016 T"-----	2, 016. 734
Glenwood, 125 feet east of Bowen, Bertchl & Co.'s store, 50 feet west of Shaw's hotel, in northwest corner of Shaw's lot; iron post stamped "1896 T"-----	1, 896. 723

Zillah quadrangle.

KLICKITAT AND YAKIMA COUNTIES.

The elevations in the following list are based on a precise-level line of the Coast and Geodetic Survey along the Northern Pacific Railway within this area.

The leveling here given includes the work of 1898 by H. S. Crowe along the Northern Pacific Railway, the work of 1906 by G. Neuner, jr., and F. E. Fellows, and some by the United States Reclamation Service.

ZILLAH QUADRANGLE.

[Latitude 46°-46° 30'; longitude 120°-120° 30'.]

UNITED STATES RECLAMATION SERVICE LEVELS.

From headworks of Sunnyside Canal along lower side of canal to Prosser.

	Feet.
Parker bottom, 1.5 miles northeast of, along canal fence, lower side of canal, 200 feet west of corner made by fence intersecting canal fence, near center of sec. 8, T. 11 N., R. 20 E.; iron post stamped "896 T"-----	896.485
T. 11 N., R. 20 E., sec. 16, along canal fence, 200 feet west of intersection of section line fence between secs. 15 and 16 and canal line fence at Crook place; iron post stamped "887 T"-----	887.511
T. 11 N., R. 20 E., sec. 23, along lower side canal along canal fence, 2.5 miles northwest of Zillah, 900 feet north of road intersecting canal road, at Rowland place; iron post stamped "883 T"-----	883.416
T. 11 N., R. 20 E., northeast corner of sec. 25, 1.5 miles north of Zillah, 0.25 mile east of Mason's hop house, corner of fence made by cross fence and canal fence; iron post stamped "890 T"-----	890.458
T. 11 N., R. 21 E., on line between secs. 30 and 31, 1.5 miles east of Zillah, at point where section line intersects canal fence 200 feet up canal from wagon bridge across canal; iron post stamped "887 T"-----	887.377
T. 11 N., R. 21 E., sec. 33, 3 miles east of Zillah, 800 feet north along fence from corner in front of Foulst house, at intersection of fence with canal fence; iron post stamped "872 T"-----	872.427
T. 10 N., R. 21 E., 2.4 feet east of section line of secs. 2 and 3, 5 miles east of Zillah, 800 feet west of R. W. Moor house, along canal fence, road intersects canal road at this point; iron post stamped "862 T"-----	862.365
T. 10 N., R. 21 E., sec. 1, 2.5 miles west of patrol house 3, 1,000 feet north of fence on section line between secs. 1 and 2 at intersection of road with canal road, 50 feet from canal bank; iron post stamped "864 T"-----	864.374
T. 10 N., R. 22 E., 400 feet west of line between secs. 8 and 9, patrol house 3, Snipe's Mountain lateral 50 feet from canal on right-hand side gate, 100 feet west of patrol house; iron post stamped "852 T"-----	852.305
T. 10 N., R. 22 E., 100 feet east of half-mile line in sec. 14, 3 miles northwest of Sunnyside, at Mrs. Schlosser place, 60 feet north of house; iron post stamped "851 T"-----	851.361
From Alfalfa on main line of Northern Pacific Ry. via Sunnyside Branch to Sunnyside, thence along range line between Ranges 22 and 23 to Mabton.	
T. 10 N., Rs. 21 and 22 E., sec. 24, 25 feet west of range line, 3.25 miles east of Granger, along Sunnyside branch Northern Pacific Ry., 18 feet west of nearest rail, 3 feet east of corner of right-of-way fence, 6 feet west of signboard, 25 feet east of north-south road; iron post stamped "756"-----	756.025
Outlook, 1.2 miles east of, 260 feet east of center of Snipe's Mountain lateral where lateral siphons under Northern Pacific Ry., 18 feet south of nearest rail, 5 feet west of second telephone pole east of Snipe's Mountain lateral where it siphons under Northern Pacific Ry.; iron post stamped "781"-----	781.494

	Feet.
Sunnyside, 11 feet northeast of northeast corner of Northern Pacific Ry. station, 11 feet south of northeast rail, main track, 5 feet from corner of platform; iron post stamped "747"-----	747. 268

From Alfalfa west to Range 18 east.

T. 10 N., R. 20 E., southwest corner of sec. 23, about 150 feet northwest of Meyer place, 4 feet east of northeast corner fence post, 34 feet east of slough, inside fence corner; iron post stamped "729"-----	728. 948
T. 10 N., R. 20 E., quarter corner west side of sec. 29, 2½ feet north of fence on north side of road, 5 feet east of fence post, 225 feet west of dry ditch crossing road, southwest of P. L. Jensen place; iron post stamped "741"-----	741. 435
T. 10 N., R. 19 E., southwest corner of sec. 23, inside northeast fence corner; iron post stamped "757"-----	757. 222
T. 10 N., R. 19 E., 64 feet southwest of northeast corner of sec. 19, 63 feet southwest of bridge over lateral "A", 54 feet west of lateral, 54 feet south of road; iron post stamped "778"-----	778. 523

From headworks of Sunnyside Canal east via mountain road to point near Sunnyside.

T. 12 N., R. 19 E., sec. 28, 150 feet east of gatehouse of headworks of Sunnyside Canal; iron post stamped "914 T" (U. S. Reclamation Service B. M.)-----	914. 689
T. 11 N., R. 19 E., northeast corner of Dunn's bridge and weir; iron post stamped "891 T" (U. S. Reclamation Service B. M.)-----	891. 544
T. 12 N., R. 20 E., 3 miles northeast of, on summit, highest part in saddle of junction of Yakima and Moxee wagon road, in rock 4 feet east of 3-foot cairn; aluminum tablet stamped "1324 T"-----	1, 324. 383
T. 12 N., R. 20 E., sec. 35, highest ridge on route, about 1 mile south of divide between Yakima and Moxee road; iron post stamped "1596 T"-----	1, 596. 133
T. 11 N., R. 21 E., NE. ¼ sec. 17, 600 feet east of Zillah and Moxee road, about 1 mile north of and on same ridge as Hovis ranch, probably section line; iron post stamped "1335 T"-----	1, 335. 258
T. 11 N., R. 22 E., southwest corner of sec. 21, 15 feet north of old State road, 20 feet east of corner of fence; top of rock in road; iron post stamped "1068"-----	1, 068. 405
T. 11 N., R. 22 E., SW. ¼ sec. 35, about 3 miles north of Mrs. Schlosser place on Sunnyside Canal, 30 feet north of old State road; iron post stamped "1089"-----	1, 089. 280
Old State road, 0.8 mile south of, about 0.5 mile northeast of small blue house; conical rock marked "1037"-----	1, 037. 37

From Hovis ranch northeast over Rattlesnake Mountain to Moxee-Rattlesnake divide.

T. 11 N., R. 21 E., sec. 2, summit of saddle on Rattlesnake Mountain, 30 feet west of road; iron post stamped "2118"-----	2, 118. 278
T. 12 N., R. 22 E., SW. ¼ sec. 20, Moxee and Rattlesnake divide, 0.2 mile southwest of white house, 0.3 mile northwest of new house, 160 feet north of road, top of small hill; iron post stamped "1803"-----	1, 803. 256

From Satus west to R. 19 E., thence south into T. 6 N., thence east to Bickleton.

	Feet.
Satus, 26 feet southwest of southwest corner of platform of station, 30 feet south of center of track, 2.5 feet north of first telegraph pole south of station (station has been moved about 800 feet north); iron post stamped "674 T"-----	674. 195
T. 9 N., R. 21 E., east of center of sec. 9, on Satus Creek road, about 0.5 mile west of house, in corner of fence, road turns around corner; iron post stamped "697"-----	697. 209
T. 9 N., R. 20 E., 0.25 mile north by 150 feet east of southwest corner of sec. 11, 0.5 mile north of Indian Tulee house, 150 feet south of junction of roads, 3-foot monument at base of rock, in rock; aluminum tablet stamped "847"-----	846. 973
T. 9 N., R. 20 E., 500 feet south of quarter corner north side of sec. 20, 150 feet above water on north cliff, 1,000 feet south of trail, in large flat rock; aluminum tablet stamped "996"-----	996. 316
Satus station, 13.4 miles west of, near rock monument, probably township line, 100 feet south of trail, on rock marked "1090 B. M."-----	1, 090. 07
T. 9 N., R. 19 E., sec 23, Goldendale wagon road crossing Dry Creek, 200 feet north by 20 feet west of junction of roads; iron post stamped "961"-----	961. 131
Goldendale road crossing Satus Creek, 20 feet east of, in knuckle of willow tree; 6-inch spike marked "977 U. S."-----	976. 97
T. 9 N., R. 19 E., SW. $\frac{1}{4}$ sec. 34, Goldendale road crossing Satus Creek, 1.5 miles west of, 30 feet south of road, 100 feet southeast of gate to Billy Shannon place, in rock; aluminum tablet stamped "1054"-----	1, 053. 727
T. 8 N., R. 19 E., SE. $\frac{1}{4}$ sec. 6, 3.8 miles west of, Satus Creek road crossing, junction of Goldendale and Bickleton roads, junction of Satus and Logy creeks, 50 feet south of road, 200 feet south of green house; iron post stamped "1145"-----	1, 144. 955
T. 8 N., R. 19 E., sec. 20, 100 feet east of road, in solid rock, 4-foot monument at base; aluminum tablet stamped "2039"-----	2, 038. 859
T. 7 N., R. 19 E., sec. 4 (unsurveyed section), 40 feet west of road, edge of long draw; iron post stamped "2840"-----	2, 840. 359
T. 7 N., R. 19 E., sec. 21, in junction of Alfalfa and Satus roads, about 1 mile northeast of pine spring, set on bed rock; iron post stamped "3170"-----	3, 170. 224
Alfalfa and Satus roads, 0.9 mile south of junction of, 50 feet west of road, top of three-cornered rock; marked "U. S. 3268 B. M."-----	3, 268. 20
Alfalfa and Satus roads, 2.1 miles south of junction of, 10 feet east of road, in root of 3-foot pine tree; 6-inch spike marked "U. S. 3477 B. M."-----	3, 477. 28
T. 6 N., R. 19 E., SW. $\frac{1}{4}$ sec. 5, on main divide, 15 feet west of road, in rock; aluminum tablet stamped "3901"-----	3, 901. 139
T. 6 N., R. 19 E., sec. 16, McCreedy sawmill, 0.3 mile west of, 20 feet north of road in small open glade; iron post stamped "3627"-----	3, 626. 954
T. 6 N., R. 19 E., near west side of sec. 12, McCreedy sawmill, 2.5 miles east of, 20 feet south of road, 30 feet southeast of box culvert, east side of drain, top of rock ledge; aluminum tablet stamped "3544"-----	3, 543. 979
T. 6 N., R. 20 E., near quarter corner east side of sec. 8, 0.4 mile southeast of ranch house, 80 feet west of forks of road, south side of road, top of boulder 2 by 4 by 1 feet; aluminum tablet stamped "3212"-----	3, 211. 842

From Bickleton northeast to Mabton.

	Feet.
T. 6 N., R. 20 E., south side of SW. $\frac{1}{4}$ sec. 2, 0.5 mile west of forks of road, northwest corner of Ostrick's ranch house; iron post stamped "3017"-----	3, 016. 941
T. 7 N., R. 21 E., north side of NW. $\frac{1}{4}$ sec. 31, 1.6 miles southwest of Donoho ranch house, 70 feet south of forks of road, east side of road, at top of ridge, 4 feet south of signpost; iron post stamped "2996"-----	2, 995. 778
T. 7 N., R. 21 E., east side of sec. 20, 0.8 mile northeast of Donoho ranch house, at southern boundary of Yakima Indian Reservation, top of ridge, 40 feet west of wagon road; iron post stamped "2806"-----	2, 805. 956
T. 7 N., R. 21 E., about sec. 21 (unsurveyed section), 3.9 miles northeast of Donoho ranch house, 0.4 mile north of cabin, 200 feet east of road near top of rocky hill, in top of bowlder 5 by 2 by 2 feet; aluminum tablet stamped "1878"-----	1, 877. 680
T. 8 N., R. 21 E., about sec. 34 (unsurveyed section), 10.1 miles southwest of Mabton, 500 feet west of ravine, 300 feet east of ravine, north point of ridge, 20 feet west of road; iron post stamped "1281"-----	1, 280. 833
T. 8 N., R. 22 E., SW. $\frac{1}{4}$ sec. 18, 6.5 miles southwest of Mabton, 20 feet east of road, 70 feet east of drain; iron post stamped "879"-----	879. 277
T. 8 N., R. 22 E., in SE. $\frac{1}{4}$ sec. 9, 3.3 miles southwest of Mabton, 30 feet north of road; iron post stamped "784"-----	793. 784
Mabton, at water tank, 2 feet east of fence around railroad section house, 35 feet north of center of track, 45 feet west of center line of wagon road at railroad crossing; iron post stamped "715 T"-----	715. 406

From Campbell ranch east to sec. 4, T. 6 N., R. 22 E., thence north 3 miles, thence west to Donoho ranch.

T. 6 N., R. 21 E., center of sec. 5, 1.8 miles southwest of forks of road, Bluelight, 30 feet east of gate, south side of wire fence, in field; iron post stamped "2809"-----	2, 808. 844
T. 6 N., R. 21 E., near east side of sec. 2, 2.2 miles east of Bluelight, 0.4 mile south of road and county line, 0.1 mile north of house, wire fence 300 feet west of canyon; iron post stamped "2585"-----	2, 584. 819
T. 6 N., R. 22 E., 0.4 mile southeast of northwest corner of sec. 5, 0.3 mile southeast of Kimball ranch house, 150 feet east of bottom of canyon, 1,000 feet east of cabin, east side of canyon, top of ledge of rock; aluminum tablet stamped "2218"-----	2, 217. 760
T. 6 N., R. 22 E., 25 feet northwest of SE. $\frac{1}{4}$ sec. 3, 8 feet east of road, L. E. Roberts ranch house, near wire fence; iron post stamped "1945"-----	1, 944. 751
T. 7 N., R. 22 E., 50 feet northwest of southeast corner of sec. 21, 0.8 mile northwest of Franklin ranch house, west side of road, near wire fence; iron post stamped "2247"-----	2, 246. 741
T. 7 N., R. 21 E., near northeast corner of sec. 25, 0.8 mile east of C. Muller ranch house, 50 feet west of forks of road, south side of road, 10 feet west of wire fence corner; iron post stamped "2587"-----	2, 586. 689
T. 7 N., R. 21 E., SW. $\frac{1}{4}$ sec. 22, 350 feet northeast of L. Spencer ranch house, 80 feet south of road, 10 feet south of wire fence, in top of rock ledge; aluminum tablet stamped "2619"-----	2, 618. 586

From sec. 4, T. 6 N., R. 22 E., southeast to Sappenfield ranch and return.

T. 6 N., R. 22 E., 3 feet north of southeast corner of sec. 11, 0.3 mile southeast of W. B. Sappenfield ranch house, 20 feet north of road; iron post stamped "1637"-----	1, 636. 508
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Arlington, Blalock Island, Prosser, and Umatilla quadrangles.

BENTON AND KICKITAT COUNTIES.

The elevations are based upon corrected heights along the Oregon-Washington Railroad & Navigation Co.'s track on a double-rodged line, run in 1899 by H. S. Crowe. The original results of that line were published in the appendix to the Twenty-first Annual Report of the Geological Survey, and the new adjustment consisted, first, in applying a mean rod correction of 0.001 foot per vertical foot increasing differences of elevation, a correction determined by comparison with the Coast and Geodetic Survey elevations south of Pendleton, Oreg.; second, in adjusting a remaining closure error of 1.4 foot from Wallula, Wash., via Umatilla to Pendleton, Oreg., and third, in raising the line between Arlington and Umatilla to an agreement without additional adjustment.

A tie was made to a bench mark in the Zillah list given as 1,636.508, a value determined by leveling based upon the Coast and Geodetic Survey precise line which crosses the Zillah quadrangle. The corrected value obtained from the south is 1,635.499 feet, a discrepancy of 1.009 feet.

The leveling in the Blalock Island and Prosser quadrangles was done in 1906 by John R. Evans, and that in the Umatilla quadrangle in 1907 by T. J. McClain. The leveling in Arlington quadrangle and additional leveling in Blalock Island quadrangle was done in 1913 by D. S. Birkett.

ARLINGTON QUADRANGLE.

[Latitude 45° 30'–46°; longitude 120°–120° 30',]

From McCredie southwest along Spokane, Portland & Seattle Ry. to Rock Creek canyon.

	Feet.
McCredie, 200 feet west of station, 80 feet south of track, 0.1 mile east of section house, in bowlder 2 feet high; aluminum tablet stamped "243 Wash 1913"-----	243. 505
McCredie, 0.8 mile west of, 175 feet east of milepost 157, 30 feet north of track, in base of telegraph pole; spike marked "U. S. 248 B. M."-----	248. 50
McCredie, 1.8 miles west of, 20 feet north of track, in base of telegraph-pole milepost 156; spike marked "U. S. 232 B. M."-----	231. 75
McCredie, 2.9 miles west of, 55 feet east of milepost 155, 100 feet north of track, in top of large bowlder; aluminum tablet stamped "236 Wash 1913"-----	236. 276
Moonax, 1.7 miles east of, 0.1 mile west of "S 1 mile" sign, 25 feet north of track, south of pole, on top of basalt bowlder; circle of paint marked "U. S. 237 B. M."-----	236. 98
Moonax, 1.2 miles east of, on north side of west end of railroad bridge 153-8 over Pine Creek, in top of concrete abutment; aluminum tablet stamped "236 Wash 1913"-----	235. 876

	Feet.
Columbia River, at mouth of Pine Creek; surface of water June 10, 1913 (water very high)-----	218. 5
Moonax, 0.3 mile east of, 175 feet east of milepost 153; spike in base of telegraph pole marked "U. S. 231 B. M."-----	230. 64
Moonax, on southeast side of concrete foundation to railroad water tank; chiseled square marked "U. S. 238 B. M."-----	238. 23
Moonax, 1.5 miles west of, 525 feet east of milepost 151, in base of telegraph pole; spike marked "U. S. 235 B. M."-----	234. 57
Roosevelt, 3.2 miles east of, 45 feet west of milepost 150, 8 feet south of track on level with rail, in rock cut, in solid basalt; aluminum tablet stamped "238 Wash 1913"-----	237. 577
Columbia River, near milepost 150; surface of water June 12, 1913 (water very high)-----	214. 9
Roosevelt, 2.2 miles east of, 450 feet east of milepost 149, 10 feet north of track, on level with rail, in small cut in solid basalt; circle of paint marked "U. S. 238 B. M."-----	238. 04
Roosevelt, 1.4 miles east of, 100 feet east of road crossing, 10 feet south of track, on top of large basalt boulder; circle of paint marked "U. S. 235 B. M."-----	234. 68
Roosevelt, 0.7 mile east of, west end on north side of railroad bridge 147-5 over Wood Creek, in top of concrete abutment; aluminum tablet stamped "234 Wash 1913"-----	233. 921
Roosevelt, on southwest corner of foundation to water tank; copper tag in top of beam, marked "U. S. 236 B. M."-----	235. 76
Roosevelt, 1 mile west of, 1,200 feet west of milepost 146, 15 feet south of track; top of large boulder at level of rail, marked "U. S. 236 B. M."-----	235. 86
Roosevelt, 2 miles west of, 1,400 feet west of milepost 145, 20 feet north of track, on top of large rock; circle of paint marked "U. S. 235 B. M."-----	235. 14
Roosevelt, 3.1 miles west of, 0.4 mile west of milepost 144, 10 feet north of track, on vertical face of rock; circle of paint marked "U. S. 234 B. M."-----	233. 90
Roosevelt, 4.1 miles west of, 12 feet south of track, east end on south side of concrete culvert over Lady Creek, 3 feet below rail; aluminum tablet stamped "224 Wash 1913"-----	223. 630
Sundale, 1 mile east of, 0.4 mile west of milepost 142, 20 feet north of track, on top of large basalt boulder; circle of paint marked "U. S. 226 B. M."-----	225. 58
Sundale, 300 feet east of milepost 141, on north side of track, in concrete abutment at east end of railroad bridge 141-0; aluminum tablet stamped "221 Wash 1913"-----	220. 686
Sundale, in front of station; top of rail-----	221. 7
Sundale, 1 mile west of, 235 feet east of milepost 140, 12 feet north of track, in top of columnar boulder in face of cut; circle of paint marked "U. S. 225 B. M."-----	224. 88
Sundale, 2.1 miles west of, 0.3 mile west of milepost 139, 10 feet south of track, in face of cut, on top of basalt boulder; circle of paint marked "U. S. 223 B. M."-----	222. 79
Sundale, 3 miles west of, 1,200 feet west of milepost 138, 35 feet north of track, on top of large boulder; circle of paint marked "U. S. 222 B. M."-----	221. 76

	Feet.
Fountain, 1.7 miles east of, 1,200 feet east of milepost 137, 150 feet into rock cut from west end, 8 feet south of track, in face of cut in solid rock; aluminum tablet stamped "223 Wash 1913"-----	222. 374
Fountain, 0.7 mile east of, 80 feet north of track, on boulder in line of old rock fence; circle of paint marked "U. S. 223 B. M."-----	222. 28
Fountain, on center of southern of two east concrete foundation piers of water tank; aluminum tablet stamped "219 Wash 1913"-----	218. 496
Fountain, 0.8 mile west of, 8 feet south of track, at east end of first cut; top of rock marked "U. S. 220 B. M."-----	220. 10
Fountain, 1.2 miles west of, 200 feet west of milepost 134, 35 feet north of track, on top of boulder; circle of paint marked "U. S. 217 B. M."-----	216. 63
Fountain, 2 miles west of, on north side of east end of concrete abutment to railroad bridge 133-5 over Rock Creek; aluminum tablet stamped "214 Wash 1913"-----	213. 391

From Roosevelt west and north along highways to Bickleton.

Roosevelt, inside and 40 feet east of southwest corner of school-house yard, in solid rock; aluminum tablet stamped "265 Wash 1913" (stamped incorrectly)-----	254. 489
Roosevelt, 1 mile northwest of, 60 feet east of point where road turns into lane between fences, 40 feet south of road, in base of fence post; spike marked "U. S. 368 B. M."-----	368. 23
Roosevelt, 2 miles northwest of, 60 feet north of road, on stony alluvial fan, on top of large basalt boulder; circle of paint marked "U. S. 442 B. M."-----	442. 08
Roosevelt, 2.6 miles northwest of, at road fork, base of hill on south side of road, 200 feet south of road, in base of fence post; spike marked "U. S. 453 B. M."-----	452. 54
Roosevelt, 4 miles northwest of, southwest corner of SE. $\frac{1}{4}$ SW. $\frac{1}{4}$ sec. 14, T. 3 N., R. 20 E., inside corner of fence on east where road turns north, on Perry McKown's ranch; iron post stamped "663 Wash 1913"-----	663. 005
Perry McKown's house, opposite, at crest of hill, on west side of road; top of rock marked "715"-----	715. 15
Roosevelt, 5.3 miles northwest of, south end of gate to private road to Luginbuhl's ranch, in gate post; spike marked "U. S. 628 B. M."-----	628. 04
Luginbuhl's ranch, 0.6 mile north of, northwest corner of field, in base of gate post; spike marked "U. S. 798 B. M."-----	797. 93
White's ranch, 5 feet south of fence corner on east side of lane, T. 3 N., R. 20 E., about in center of sec. 4, 500 feet west of house at R. D. White's ranch; iron post stamped "994 Wash 1913"-----	993. 758
White's ranch, 0.5 mile north of, first bridge uphill (in gulch), in foundation; spike marked "U. S. 1203 B. M."-----	1, 206. 94
White's ranch, 1.6 miles north of, in gulch, 20 feet east of road, on top of basalt boulder; circle of paint marked "U. S. 1405 B. M."-----	1, 404. 76
White's ranch, 2.2 miles north of, in canyon, in brace on northwest corner of bridge over stream; spike marked "U. S. 1720 B. M."-----	1, 719. 39
Dot, 4.5 miles south of, 350 feet east of G. Binn's ranch house, 15 feet north of road, on top of large basalt boulder; circle of paint marked "U. S. 2215 B. M."-----	2, 214. 80

Feet.

Dot, 3.6 miles south of, southwest corner of NW. $\frac{1}{4}$ SW. $\frac{1}{4}$ sec. 20, T. 4 N., R. 20 E., in base of corner fence post; spike marked "U. S. 2416 B. M."	2, 415. 60
T. 4 N., R. 20 E., southeast corner of NE. $\frac{1}{4}$ sec. 18, 3.4 miles south of Dot, 35 feet north of corner in line of fence; iron post stamped "2446 Wash 1913"	2, 445. 743
T. 4 N., R. 20 E., southeast corner of sec. 18, in base of corner fence post; spike marked "U. S. 2429 B. M."	2, 428. 74
Dot, northwest corner of church building, at base	2, 201. 02
Dot, 200 feet east of schoolhouse, 40 feet west of road, in base of telephone pole; spike marked "U. S. 2184 B. M."	2, 183. 90
Dot, 15 feet north of, southwest corner of sec. 32, in line of fence, T. 5 N., R. 20 E.; iron post stamped "2276 Wash 1913"	2, 275. 951
T. 5 N., R. 20 E., northeast corner of sec. 31, in base of telephone pole; spike marked "U. S. 2387 B. M."	2, 387. 14
T. 5 N., R. 20 E., between secs. 29 and 30, near telephone pole; surface of ground, pole painted "U. S. 2461 B. M."	2, 460. 50
T. 5 N., R. 20 E., 0.5 mile south of northeast corner of sec. 19, 40 feet north of gate in fence, in post; spike marked "U. S. 2550 B. M."	2, 549. 74
T. 5 N., R. 20 E., northwest corner of NE. $\frac{1}{4}$ sec. 19, 4.3 miles south of Cleveland, at turn of road, south side within fence; iron post stamped "2623 Wash 1913"	2, 622. 976
Mason's place, opposite; surface of ground, painted on telephone pole at top of hill "2812"	2, 812. 04
T. 5 N., R. 20 E., northwest corner of NE. $\frac{1}{4}$ sec. 7, 40 feet east of road, in base of telephone pole; spike marked "U. S. 2922 B. M."	2, 922. 18
Cleveland, 1 mile south of, 150 feet north of east-west fence, 40 feet west of road, in base of telephone pole; spike marked "U. S. 3009 B. M."	3, 008. 46
Cleveland, 0.2 mile west of, quarter corner between secs. 31 and 30, T. 6 N., R. 20 E., northwest of four corners, 10 feet west of road, in line of poles; iron post stamped "3071 Wash 1913"	3, 071. 180
Cleveland, at intersection of streets at corner of Hotel McCready, in base of telephone pole; spike marked "U. S. 3032 B. M."	3, 031. 90
Cleveland, 1.1 miles east of, northeast corner of Van Nostern's ranch barnyard, at corner of fence, in base of telephone pole; spike marked "U. S. 3072 B. M."	3, 071. 51
Cleveland, 1.5 miles east of, 10 feet south of road at junction of roads, in base of telephone pole; marked spike "U. S. 3033 B. M."	3, 032. 97
Bickleton, 1.3 miles west of, northwest corner of bridge over Pine Creek, in top of beam; spike marked "U. S. 2980 B. M."	2, 979. 38

From Bickleton southeast along highways to McCredie.

Bickleton, in school yard, in line of fence due south of building; iron post stamped "3002"	3, 001. 896
Bickleton, 1.2 miles southeast of, at northeast corner of intersection of roads, at fence corner, on top of large rock; circle of paint marked "U. S. 2925 B. M."	2, 924. 58
Bickleton, 2.1 miles southeast of, at turn in road, 30 feet west of road, in corner of fence, on top of large boulder; circle of paint marked "U. S. 2887 B. M."	2, 886. 32
Bickleton, 3 miles southeast of, northwest corner of NE. $\frac{1}{4}$ sec. 35, T. 6 N., R. 20 E., inside of fence corner and 5 feet south; iron post stamped "2853 Wash 1913"	2, 852. 184

	Feet.
Bickleton, 4.5 miles southeast of, at oblique turn of road to southeast, 40 feet west of road, in corner of fence, in lower end of brace against post; spike marked "U. S. 2765 B. M."-----	2,764.36
Bickleton, 5.5 miles southeast of, 10 feet west of road where it turns south, in base of corner fence post; spike marked "U. S. 2682 B. M."-----	2,681.73
Bickleton, 6 miles southeast of, about center of NW. $\frac{1}{4}$ sec. 7, T. 5 N., R. 21 E., at junction of roads, just inside of fence corner south and west of junction; iron post stamped "2638 Wash 1913"-----	2,637.959
Bickleton, 7.6 miles southeast of, at center of sec. 8, T. 5 N., R. 21 E., in base of corner fence post on west side of road; spike marked "U. S. 2498 B. M."-----	2,497.33
Bickleton, 8.6 miles southeast of, in line of last fence out, in base of corner fence post east of road; spike marked "U. S. 2395 B. M."-----	2,394.22
Bickleton, 9.3 miles southeast of, 10 feet north of east fork, at slight diversion of roads, on top of large angular boulder; circle of paint marked "U. S. 2294 B. M."-----	2,293.81
T. 5 N., R. 21 E., near quarter corner between secs. 15 and 22, 10.4 miles southeast of Bickleton, at bend in road, 30 feet north of east-west fence, north side of gate; iron post stamped "2134 Wash 1913"-----	2,133.689
T. 5 N., R. 21 E., northeast corner of sec. 22, south side of road at intersection of road to south, at fence corner, in base of post; spike marked "U. S. 2085 B. M."-----	2,084.78
T. 5 N., R. 21 E., southeast corner of sec. 14, 15 feet north of road, in base of fence post near corner; spike marked "U. S. 1921 B. M."-----	1,920.41
T. 5 N., R. 22 E., 50 feet east of southwest corner of sec. 18 (pile of rocks), in line of fence; iron post stamped "1795 Wash 1913"-----	1,795.106
T. 5 N., R. 22 E., 25 feet west of northeast corner of sec. 19, in base of fence post; spike marked "U. S. 1631 B. M."-----	1,630.67
Sixprong, 5.6 miles northwest of, east edge of sec. 20, T. 5 N., R. 22 E., where road passes corner of fence, in base of corner fence post; spike marked "U. S. 1488 B. M."-----	1,487.78
Sixprong, 4.5 miles north of, 25 feet east of northwest corner of sec. 22, T. 5 N., R. 22 E., in line of fence, 6 feet south of road; iron post stamped "1364 Wash 1913"-----	1,363.712
T. 5 N., R. 22 E., near center of sec. 22, 4 miles north of Sixprong, at corner of fence, in base of post; spike marked "U. S. 1251 B. M."-----	1,250.26
Sixprong, 2.5 miles north of, opposite Comstock's ranch house, at intersection of roads, 50 feet west of corner and in line of east-west fence, in base of telephone pole; spike marked "U. S. 1107 B. M."-----	1,106.18
Sixprong, southwest corner of school yard, northwest corner of sec. 35, T. 5 N., R. 22 E., inside of fence corner; iron post stamped "1018 Wash 1913"-----	1,017.956
Sixprong, 1 mile south of, northwest corner of sec. 2, T. 4 N., R. 22 E., 15 feet south of east-west fence, 30 feet east of road, in base of telephone pole; spike marked "U. S. 972 B. M."-----	971.43
Sixprong, 1,000 feet south of store, on top of bench; painted on telephone pole "899"-----	898.72
Sixprong store, 0.3 mile south of, on east side of road at intersection, in base of telephone pole; spike marked "U. S. 873 B. M."-----	872.95

	Feet.
Sixprong, 2 miles south of, near northwest corner of sec. 14, T. 4 N., R. 22 E., at extreme top of hill, 30 feet east of road, in line of fence near old gate; iron post stamped "1369 Wash 1913"-----	1, 368. 393
McCredie, 0.5 mile north of, on bench, 300 feet south of road, on north side of deep canyon, on top of very large basalt boulder; circle of paint marked "U. S. 899 B. M."-----	899. 09
McCredie, 0.3 mile north of, on lower bench, 8 feet east of road, on top of very large angular boulder; circle of paint marked "U. S. 665 B. M."-----	664. 34
From Rock Creek canyon north and east along highways to point 3.4 miles south of Dot.	
Rock Creek canyon, 0.9 mile north of railroad at mouth, 40 feet south of road ford, in line of fence on east side of creek, opposite Indian shacks, on top of minor basalt cliff; circle of paint marked "U. S. 246 B. M."-----	245. 18
Rock Creek canyon, 2.3 miles north of railroad bridge, 0.2 mile down stream from Indian Charley's ranch cabin, 20 feet east of road, 200 feet south of fence corner, on top of large rock; circle of paint marked "U. S. 321 B. M."-----	320. 91
T. 3 N., R. 19 E., near center of sec. 16, 2.6 miles north of mouth of Rock Creek canyon, at bend, 0.2 mile north of Indian Charley's cabin, 150 feet east of road, in line of east-west fence; iron post stamped "364 Wash 1913"-----	363. 468
Rock Creek canyon, point where Walker Grade leaves Creek road, 30 feet west of intersection, in base of fence post; spike marked "U. S. 433 B. M."-----	432. 63
Rock Creek canyon, 4.5 miles from mouth, where Walker Grade crosses stream bed, leading to Goodnoe Hills, west side of Rock Creek, 40 feet west of road, at northeast corner of small Indian barn; iron post stamped "423 Wash 1913"-----	423. 104
Rock Creek canyon, 1.5 miles above Walker Grade crossing, at corner of small fenced grain field, west side of road, in base of fence post; spike marked "U. S. 502 B. M."-----	501. 30
Rock Creek canyon, 1.5 miles below Squaw Creek bridge, at foot of upgrade to north, 160 feet west of road, on top of large boulder; circle of paint marked "U. S. 593 B. M."-----	592. 59
Rock Creek canyon, junction of Rock and Squaw creeks, 800 feet south of Squaw Creek bridge, 700 feet north of Moser's ranch house, adjacent to northeast corner of field, 5 feet west of road; iron post stamped "641 Wash 1913"-----	640. 98
Squaw Creek canyon, 1 mile above Goldendale Road bridge, mid-distance of fenced pasture, 15 feet west of road, on top of large boulder, marked "U. S. 769 B. M."-----	769. 03
Newell's ranch house, 0.4 mile west of, in gully, where dim road turns off to north up Squaw Creek, 15 feet north of road; top of rock marked "832"-----	831. 73
Newell's ranch house, 300 feet south of, on hillside, 50 feet above, 30 feet south of turn in Dot road, in base of large corner fence post; spike marked "U. S. 1110 B. M."-----	1, 109. 97
T. 4 N., R. 19 E., near center of NW. $\frac{1}{4}$ sec. 16, on Dot-Goldendale road, top of first hill east of Newell's ranch, 1.7 miles west of Wood's ranch, 15 feet north of road, in line of wire fence; iron post stamped "1713 Wash 1913"-----	1, 712. 253

	Feet.
Wood's ranch, 0.6 mile west of, at turn in road, 8 feet south of road, on side of hill, in base of corner fence post; spike marked "U. S. 2037 B. M."-----	2, 036. 31
Oak Grove School, 400 feet east of, opposite Wood's ranch orchard, 10 feet north of road, on top of sawed-off butt on south side of large oak tree; spike marked "U. S. 2347 B. M."-----	2, 346. 88
T. 4 N., R. 19 E., near northwest corner of sec. 23, 0.5 mile east of Oak Grove School, 20 feet west of fence corner and section line, on north side of road; iron post stamped "2548 Wash 1913"-----	2, 547. 325
T. 4 N., R. 19 E., northwest corner of sec. 24, on south side of road, in base of corner fence post; spike marked "U. S. 2597 B. M."-----	2, 596. 46
T. 4 N., R. 20 E., southwest corner of sec. 18, 10 feet east of corner, in base of fence post; spike marked "U. S. 2504 B. M."-----	2, 503. 28

BLALOCK ISLAND QUADRANGLE.

[Latitude 45° 30'—46°; longitude 119° 30'—120°.]

From Castlerock west along Spokane, Portland & Seattle Ry. to McCredie (8 lines).

Castlerock, in NW. $\frac{1}{4}$ sec. 8, T. 4 N., R. 24 E., north bank of river, opposite rock 100 feet north of river, 30 feet north of shack at ferry landing; aluminum tablet stamped "247"-----	248. 299
Carley, 1 mile east of station, 8 feet south of track, in base of mail crane; bolthead marked "U. S. 251 B. M."-----	251. 59
Klickitat-Benton county line, at intersection of; top of rail-----	251. 4
Carley, 0.7 mile west of, 175 feet east of milepost 163, 80 feet north of railroad track, 8 feet north of road, in large basalt boulder in through cut; aluminum tablet stamped "252 Wash 1913"-----	252. 207
Alderdale, 200 feet east of warehouse, north side of track, in base of telegraph pole; spike marked "U. S. 249 B. M."-----	249. 33
Alderdale, 0.2 mile west of, west end on north side of bridge 162 O, on top of concrete abutment; chiseled square-----	246. 15
Alderdale, 1.4 miles west of, 450 feet east of milepost 161, 35 feet north of track, on top of large basalt boulder; circle of paint marked "U. S. 248 B. M."-----	248. 65
Alderdale, 2.1 miles west of, 0.2 mile east of milepost 160, opposite track from steep rocky draw in hillside, 30 feet south of track, in large basalt boulder 2 feet high; aluminum tablet stamped "248 Wash 1913"-----	248. 376
McCredie, 1.1 miles east of, 15 feet due west of milepost 159, 20 feet north of track, on top of basalt boulder; circle of paint marked "U. S. 248 B. M."-----	248. 09
McCredie, 0.4 mile east of, 30 feet north of track and 15 feet east of road at road crossing, on top of large boulder; circle of paint marked "U. S. 246 B. M."-----	246. 40

From Milepost 177 north by road crossing river to Paterson, thence to mouth of Glade Creek and northwest to Dead Canyon 9 miles north of Carley, thence south to Carley, thence across river to Castlerock.

T. 5 N., R. 26 E., southwest corner of sec. 10, 1.7 miles east of Paterson, 160 feet south of railroad embankment, east edge of road; iron post stamped "263"-----	264. 173
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	Feet.
T. 5 N., R. 25 E., NE. $\frac{1}{4}$ sec. 13, unsurveyed, 1.77 miles west of Paterson, 100 feet south of center of railroad embankment, 250 feet north of road, in firm rock on rocky point; aluminum tablet stamped "267"-----	267. 998
T. 5 N., R. 25 E., about sec. 21, unsurveyed, 5.21 miles west of Paterson, 100 feet south of railroad cut, 30 feet north of road, in firm rock; aluminum tablet stamped "260"-----	261. 419
T. 5 N., R. 25 E., about sec. 30, unsurveyed, 8.41 miles west of Paterson, 0.3 mile east of high hill, on ridge, in large bowlder; aluminum tablet stamped "622"-----	623. 615
T. 5 N., R. 24 E., about sec. 16, unsurveyed, 6.04 miles east of Carley-Prosser road, on flat; iron post stamped "483"-----	484. 115
T. 5 N., R. 24 E., about northeast corner of sec. 18, unsurveyed, 4 miles east of Carley-Prosser road, on round knoll, 600 feet north of Dead canyon, in firm granite rock, near a rock mound; aluminum tablet stamped "576"-----	577. 122
T. 5 N., R. 23 E., east side of SE. $\frac{1}{4}$ sec. 10, 6.94 miles north of Carley, 500 feet north of Hansen's store, 25 feet west of road; iron post stamped "734"-----	735. 205
T. 5 N., R. 23 E., north side of NW. $\frac{1}{4}$ sec. 26, 4.6 miles north of Carley, 2.3 miles south of Hansen's store, 20 feet west of road, on fence line; iron post stamped "656"-----	657. 294
T. 4 N., R. 23 E., W. $\frac{1}{4}$ sec. 1, 1.77 miles northwest of Carley; east of summit, 20 feet north of road; iron post stamped "705"-----	706. 294
Castlerock, T. 4 N., R. 24 E., NW. $\frac{1}{4}$ sec. 8, north bank of river, opposite rock, 100 feet north of river, 30 feet north of shack at ferry landing; aluminum tablet stamped "247"-----	248. 299
From mouth of Glade Creek north and east by road to point 3.6 miles northwest of Irrigon triangulation station, thence east and south to point 1.7 miles east of Paterson.	
T. 5 N., R. 25 E., 3.3 miles northeast of sec. 9, unsurveyed, 20 feet east of Prosser-Glade road, in east fork of Glade canyon; iron post stamped "362"-----	363. 247
T. 6 N., R. 25 E., about sec. 35, unsurveyed, 5.92 miles northeast of Glade, 20 feet east of Prosser-Glade road; iron post stamped "511"-----	512. 336
Irrigon triangulation station, T. 6 N., R. 26 E., NW. $\frac{1}{4}$ sec. 34, 3 miles north of Holmes ranch, on high ridge 0.25 mile east of Prosser-Irrigon road; iron post stamped "738"-----	739. 727
From point 9 miles north of Carley north 1 mile, thence north 2 miles to southwest corner of sec. 7, T. 6 N., R. 24 E.	
T. 6 N., R. 23 E., 30 feet southeast of northwest corner of sec. 35, 13 miles north of Carley, at crossroads; iron post stamped "793"-----	794. 222
T. 6 N., R. 23 E., northeast corner of sec. 25, 10.1 miles north of Carley, 500 feet west of intersection of two roads, 30 feet west of section corner, west edge of road; iron post stamped "865"-----	866. 278
From point 9 miles north of Carley northwest to southeast corner of sec. 11, T. 6 N., R. 22 E.	
T. 6 N., R. 23 E., north side of sec. 29, 3 miles west of Carley-Prosser road, at intersection of two gulches, 500 feet west of school-house, in rocky point, in firm rock; aluminum tablet stamped "990"-----	990. 769

PROSSER QUADRANGLE.

[Latitude 46°-46° 30'; longitude 119° 30'-120°.]

T. 6 N., R. 26 E., sec. 18.

	Feet.
T. 6 N., R. 26 E., sec. 18, 9.6 miles northeast of Glade, 15 feet north of bend in road, at line fence; iron post stamped "716"-----	717. 284

From Sappenfield ranch east 7 miles to crossroads.

T. 6 N., R. 23 E., south side of sec 9, 30 feet northwest of quarter corner, 3.5 miles east of Sappenfield ranch house, at intersection of two roads; iron post stamped "1231"-----	1, 232. 164
T. 6 N., R. 24 E., 30 feet northeast of southwest corner of sec. 7, 7 miles east of Sappenfield ranch house, at crossroads; iron post stamped "897"-----	898. 121

UMATILLA QUADRANGLE.

[Latitude 45° 30'-46°; longitude 119°-119° 30'.]

From Cold Springs, Oreg., across Columbia River north to sec. 26, T. 6 N., R. 29 E., thence west to Irrigon triangulation station, T. 6 N., R. 26 E.

T. 5 N., R. 29 E., near quarter corner of secs. 2 and 11, 0.25 mile east of Mottinger ranch, in road forks at mouth of canyon; iron post stamped "329"-----	330. 048
T. 6 N., R. 29 E., northwest part of sec. 26, 2.4 miles northwest of Mottinger ranch, on west side of road; iron post stamped "869"---	869. 908
T. 6 N., R. 29 E., near quarter corner secs. 29 and 30, 6.6 miles northwest of Mottinger ranch, east side of road to Siding; iron post stamped "859"-----	859. 522
Expansion triangulation station, 3 miles northeast of Umatilla, T. 6 N., R. 28 E., center of sec. 33, in rock; tablet stamped "1016"-----	1, 016. 802
T. 6 N., R. 28 E., 2.5 miles northeast of Plymouth, 0.85 mile west of road; iron post stamped "589"-----	589. 952
T. 6 N., R. 27 E., corner of secs. 26, 27, 34, and 35, 3.5 miles northwest of Plymouth, 20 feet east of Umatilla-Prosser road; iron post stamped "570"-----	570. 542
Kings ranch, 4 miles northwest of, 20 feet west of old wood road; iron post stamped "608"-----	608. 560

Portland quadrangle.

CLARKE COUNTY.

The elevations in the following list were determined by primary leveling connected at Portland, Oreg., with a double-rodged line from Astoria, Oreg. Elevations in Oregon in this quadrangle can be found in Bulletin 556.

The leveling was done in 1896 by C. C. Ward.

PORTLAND QUADRANGLE.

[Latitude 45° 30'–45° 45'; longitude 122° 30'–122° 45'.]

United States Military Reservation at Vancouver.

Columbia River, north bank, in Chinese vegetable garden east of Vancouver, in 14-inch cottonwood stump; head of nail-----	F. 17.7
Reservation, northwest corner of; top of stone post 8 by 8 inches and 3 feet high-----	28.3
Quartermaster and commissary buildings, 6.9 feet south of hexagonal building and 70 feet from adjoined front corner of; iron post stamped "26"-----	28.376

From Vancouver northeast along Yaacolt branch of Northern Pacific Ry. to Brush Prairie.

Vancouver, in base of stone column at right of main entrance to Clarke County courthouse; bronze tablet stamped "73"-----	75.009
Minnehaha siding, about 60 feet west of, 8 feet west of railroad track and 8 feet north of wagon road crossing, in root of 27-inch fir stump; head of nail-----	249.7
T. 2 N., R. 2 E., sec. 6, 10 feet southeast of railroad at road crossing, in 36-inch fir stump; head of nail-----	283.5
Thornton ranch, in sec. 32, T. 3 N., R. 2 E., in northeast corner of cattle guard at road crossing; head of spike-----	206
Brush Prairie post office, 40 feet north of railroad and 100 feet west of Battle Ground road, in 36-inch fir stump; head of nail-----	294.8

From Brush Prairie south to Fishers Landing, thence west to Vancouver.

T. 3 N., R. 2 E., 50 feet from corner of secs. 13, 14, 23, and 24, in fence corner at southeast angle of road intersection; iron post stamped "299"-----	300.639
T. 3 N., R. 2 E., corner of secs. 25, 26, 35, and 36, 10 feet west of road and 40 feet south of Union schoolhouse road, in root of fir stump; head of nail-----	278
T. 2 N., R. 2 E., sec. 11, at northwest angle of road intersection near west side, 21 feet west of Donation Claim corner; iron post stamped "218"-----	219.865
T. 2 N., R. 2 E., near center of sec. 12, 10 feet north of forks of road, in 28-inch fir tree; head of nail-----	212.3
T. 2 N., R. 2 E., quarter corner between secs. 24 and 25, 102 feet from house, in fence corner at southwest angle of crossroads; iron post stamped "303"-----	305.314
T. 2 N., R. 2 E., in sec. 19, at southeast angle of intersection with Camas road; iron post stamped "206"-----	207.736
T. 2 N., R. 2 E., on north side of road, 75 feet west of crossroads, in top of 16-inch fir stump; head of nail-----	179.7
United States water tank, at southwest corner of forks of road, in root of 2-foot fir stump; head of nail-----	177

From Vancouver north along river road to Salmon Creek, thence east to Brush Prairie.

Burntbridge Creek, near quarter corner on line between secs. 4 and 9, T. 2 N., R. 1 E., in southwest angle of first crossroads north of creek, in root of 3-foot fir stump; head of nail-----	39.4
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	Feet.
Secrist schoolhouse, sec. 4, T. 2 N., R. 1 E., in corner of yard, 2.5 feet from fence and 60 feet from corner of schoolhouse, at forks of road; iron post stamped "212"-----	213.796
T. 3 N., R. 1 E., corner of secs. 28, 29, 32, and 33, north of road forks, in 3-foot fir stump; head of nail-----	200.9
Felida post office, 1 mile north of, near southeast corner of sec. 20, T. 3 N., R. 1 E., 25 feet from mudsill at north end of trestle over Salmon Creek and 10 feet from mudsill at west end of short trestle, east of road at north end of trestle; iron post stamped "36"-----	38.339
Salmon Creek schoolhouse, 160 feet from, in sec 28, T. 3 N., R. 1 E., in orchard, 2 feet from fence and 18 feet from fence corner, at southeast angle of crossroads; iron post stamped "194"-----	196.173
St. John's Church, 0.75 mile west of, at fence corner near forks of road, in root of 3-foot fir tree; head of nail-----	261.03
St. John's Church, east of road and north of second-class road turning off to east through gate, in root of partly decayed stump; head of nail-----	262.87
T. 3 N., R. 2 E., corner of secs. 29, 30, 31, and 32, in Curtin's yard, 150 feet from fence corner and 6.2 feet from fence, 4 feet east of walk, and 116 feet from door of house, in northeast angle of forks of road; iron post stamped "232"-----	233.753
T. 3 N., R. 2 E., northeast corner of sec. 32, north of road, 100 feet south of crossroads, in root of 14-inch oak tree; head of nail-----	201.076

Anderson, Chehalis, Gate, Kalama, Olympia, and Tacoma quadrangles.

LEWIS AND PIERCE COUNTIES.

The elevations in the following list were determined by primary leveling and accord with Bulletin 457. The connection with Coast and Geodetic Survey bench mark at Olympia was unsatisfactory and was not used, the adjusted elevation based upon Tacoma being 1.09 feet less than the Coast and Geodetic Survey value at Olympia.

The work was done in 1912 and 1913 by E. M. Bandli.

ANDERSON QUADRANGLE.

[Latitude 47°-47° 15'; longitude 122° 30'-122° 45'.]

From Lakeview southwest along Northern Pacific Ry. to point 1.9 miles southwest of Sherlock.

	Feet.
Lakeview, 1.8 miles south of, 40 feet west of track near road crossing, in telegraph pole; copper nail marked "271.8"-----	272.24
Country Club station, 60 feet north of, 6 feet north of track; iron post stamped "Prim. Trav. Sta. No. 18, 277"-----	277.720
Dupont, 4 miles northeast of, 10 feet east of track at road crossing, in railroad crossing signpost; copper nail marked "277.3"-----	277.81
Dupont, 3.6 miles northeast of, 10 feet east of track at road crossing, in railroad crossing signpost; copper nail marked "265.0"-----	265.46
Dupont, 2.9 miles northeast of, at road crossing, 10 feet east of track, in railroad crossing signpost; copper nail marked "275.8"-----	276.29
Dupont, 1.8 miles northeast of, 30 feet north of track at road crossing, in telegraph pole; copper nail marked "257.5"-----	257.98

	Feet.
Dupont, 0.7 mile northeast of, 6 feet northwest of track, 2 feet south of railroad crossing sign; iron post stamped "Prim. Trav. Sta. No. 17, 284, 1912"-----	284. 612
Dupont, in front of station, 50 feet southeast of track, in telegraph pole; copper nail marked "252.9"-----	253. 38
Dupont, 0.9 mile southwest of, 12 feet east of track, in railroad crossing post; copper nail marked "252.6"-----	253. 00
Dupont, 2.3 miles southwest of, 4 feet south of track, in foundation of bridge crossing above track; copper nail marked "189.4"-----	189. 81
Sherlock, 1 mile northwest of, 6 feet from track, in foundation of road-crossing electric-bell signpost; copper nail marked "73.3"----	73. 75
Sherlock, road bridge over Nisqually River, in southeast corner of concrete pier; aluminum tablet stamped "28.8"-----	27. 213
Sherlock, 0.3 mile southwest of, 6 feet southeast of track, 10 feet southeast of road intersection; iron post stamped "Prim. Trav. Sta. No. 16, 23"-----	23. 338
Sherlock, 1.2 miles southwest of, in 1-mile post southwest of Sherlock station; copper nail marked "46.8"-----	47. 21
Sherlock, 1.9 miles southwest of, in support in west end of bridge (No. 9) crossing over private road; copper nail marked "78.1"----	78. 52
From point 6 miles south of Lakeview southwest along Northern Pacific Ry. to Roy. (Leveled twice.)	
Lakeview, 7.1 miles south of, 42 feet west of track, 30 feet north of telegraph pole No. 34-29, in telephone pole not numbered; copper nail marked "350.1"-----	350. 42
Lakeview, 8.2 miles south of, 10 feet east of track, 15 feet southeast of track and road intersection; iron post stamped "Prim. Trav. Sta. No. 4, 345, 1912"-----	344. 917
Roy, 1 mile north of, 40 feet west of track, south of road crossing, in telegraph pole; copper nail marked "327.2"-----	327. 52
Roy, 0.4 mile north of, at southeast corner of first road crossing north of Roy, in foundation of cattle guard; copper nail marked "319.8"-----	320. 15

CHEHALIS QUADRANGLE.

[Latitude 46° 30'-47°; longitude 122° 30'-123°.]

From Roy southwest along Northern Pacific Ry. to Tenino, thence north along Port Townsend Southern R. R. to Tumwater Bridge.

Roy, 540 feet south of station, 21 feet east of track, 10 feet north of road at road crossing; iron post stamped "Prim. Trav. Sta. No. 5, 315, 1912"-----	315. 123
Roy, 1.3 miles south of, 40 feet west of track at private road crossing, in telegraph pole; copper nail marked "316.2"-----	316. 58
Roy, 2.7 miles south of, 5 feet northeast of track, in top of concrete pier at north end of railroad bridge over Nisqually River; aluminum tablet stamped "288, 1912"-----	288. 095
Roy, 3.7 miles south of, 36 feet southeast of track, in telegraph pole; copper nail marked "313.0"-----	312. 83
Yelm, 0.6 mile north of, 34 feet northwest of track, in telegraph pole; copper nail marked "336.1"-----	336. 00

	Feet.
Yelm, 276 feet north of station, 10 feet northwest of track at first road crossing north of station, 3 feet from railroad signpost; iron post stamped "Prim. Trav. Sta. No. 6, 350, 1912"-----	350.011
Yelm, 1 mile south of, 9 feet southeast of track, in 1-mile post; copper nail marked "366.4"-----	366.30
Yelm, 2.2 miles south of, 35 feet northwest of track, in telegraph pole; copper nail marked "383.7"-----	383.60
Yelm, 3.8 miles south of, 40 feet north of track, in telegraph pole; copper nail marked "428.0"-----	427.90
Rainier, 174 feet east of station, 10 feet north of track, at first road crossing east of station, near railroad signpost; iron post stamped "Prim. Trav. Sta. No. 7, 431, 1912"-----	429.727
Rainier, 0.6 mile southwest of station, 10 feet southeast of track, in railroad crossing signpost; copper nail marked "403.8"-----	403.71
Rainier, 1.4 miles south of, 40 feet north of track, in telegraph pole No. 17-19; copper nail marked "343.7"-----	343.60
McIntosh, 1 mile northeast of, 40 feet south of track, in telephone pole; copper nail marked "364.9"-----	364.68
McIntosh, 7 feet south of track, in post supporting railroad water tank; copper nail marked "344.0"-----	343.83
McIntosh, 0.7 mile south of, 3 feet north of track at crossroads, 6 feet south of electric bell; iron post stamped "Prim. Trav. Sta. No. 8, 352, 1912"-----	351.678
McIntosh, 1.6 miles south of, 8 feet south of track, in telegraph pole; copper nail marked "300.7"-----	300.57
Tenino, 1.9 miles north of, at road crossing, 40 feet north of track, in telegraph pole; copper nail marked "296.8"-----	296.54
Tenino, 0.8 mile north of, 20 feet north of track, in telegraph pole; copper nail marked "290.0"-----	289.87
Tenino, 42 feet in front of station; iron post stamped "Prim. Trav. Sta. No. 19, 280, 1912"-----	279.532
Tenino, 1 mile north of, 8 feet south of track, in foundation of switch-board; copper nail marked "300.3"-----	300.09
Tenino, 2.2 miles north of, 45 feet south of road crossing, 8 feet east of track, in telegraph pole; copper nail marked "292.6"-----	292.46
Tenino, 2.9 miles north of, 5 feet northeast of track at road crossing, in post; copper nail marked "245.5"-----	245.32
Tenino, 3.9 miles north of, 8 feet east of track, in telegraph pole; copper nail marked "252.4"-----	252.18
Tenino, 5.4 miles north of, 30 feet northeast of track, in telegraph pole; copper nail marked "263.1"-----	262.84
Tenino, 5.4 miles north of, in front of first house south of Plumb station, east of road at corner of garden fence, private road to house; iron post stamped "263 Wash 1912"-----	262.581
Tenino, 6.8 miles northwest of, 3 feet west of track, in railroad switch; copper nail marked "241.3"-----	241.05
Tenino, 7.6 miles northwest of, 15 feet northeast of track, in telegraph pole; copper nail marked "213.6"-----	213.44
Tenino, 7.8 miles northwest of, 30 feet east of track, in telegraph pole; copper nail-----	211.41
Tenino, 7.8 miles northwest of, at first road crossing north of Plumb, 40 feet east of track, near telegraph pole; iron post stamped "212 Wash 1912"-----	211.807

	Feet.
Tenino, 9.1 miles northwest of, 30 feet southwest of track and road crossing, in telegraph pole; copper nail marked "186.0"-----	185.91
Tenino, 10 miles northwest of, 30 feet southwest of track, in telegraph pole; copper nail marked "188.5"-----	189.01
Tenino, 10.4 miles northwest of, 30 feet west of track at T road west, in telegraph pole; copper nail marked "191.2"-----	191.03
Tenino, 10.9 miles northwest of, 5 feet east of track at road crossing; iron post stamped "Prim. Trav. Sta. No. 11, 184, 1912"-----	183.820
Tenino, 11.6 miles northwest of, 60 feet west of track at T road, southwest corner of intersection, in telegraph pole; copper nail marked "174.5"-----	174.24

From Tenino south along Northern Pacific Ry. to Winlock.

Tenino, 0.7 mile southwest of, in southwest corner fence post of Northern Pacific right of way, 30 feet northwest of track; copper nail marked "277.0"-----	276.94
Tenino, 1.4 miles southwest of, 15 feet southwest of track at road crossing, in Northern Pacific crossing signpost; copper nail marked "270.3"-----	270.29
Bucoda, 0.6 mile northeast of, 10 feet east of track; copper nail in post marked "252.7"-----	252.68
Bucoda, 420 feet southwest of station, 30 feet west of track; iron post stamped "Prim. Trav. Sta. No. 20, 254"-----	253.683
Bucoda, 0.5 mile southwest of, 15 feet northwest of track at road crossing, in telegraph pole; copper nail marked "250.6"-----	250.56
Bucoda, 1.6 miles southwest of, 30 feet southwest of track, in telegraph pole; copper nail marked "241.1"-----	241.04
Bucoda, 2.4 miles southwest of, 60 feet southwest of track, in tree stump; copper nail marked "223.5"-----	223.46
Bucoda, 3.9 miles southwest of, 15 feet northeast of private road crossing, 25 feet northwest of track; iron post stamped "Prim. Trav. Sta. No. 21, 207, 1912"-----	206.817
Bucoda, 4.5 miles south of, 20 feet west of track at road crossing, in telegraph pole; copper nail marked "207.4"-----	207.34
Centralia, 1 mile north of, 15 feet east of track, in telegraph pole; copper nail marked "194.4"-----	194.37
Centralia, 420 feet northwest of station, 8 feet west of track, 30 feet northwest of Maple Street; iron post stamped "Prim. Trav. Sta. No. 33, 184, 1912"-----	184.380
Centralia, 0.6 mile south of, at Nut Street road crossing, 8 feet east of track; circle of paint on electric bell signal post-----	182.00
Centralia, 1.8 miles south of, 5 feet east of track, in northeast end of trestle; copper nail marked "171.2"-----	171.08
Chehalis, 0.5 mile north of station, 12 feet northeast of track at road crossing, in telegraph pole; copper nail marked "177.8"-----	177.70
Chehalis, 240 feet north of track, 30 feet north of West Street crossing, 9 feet north of signal tower; iron post stamped "188"-----	187.696
Chehalis, 0.9 mile south of station, 6 feet west of track, in north end of trestle; copper nail marked "178.3"-----	178.19
Chehalis, 2.1 miles southeast of, in southwest end of bridge (No. 60) foundation; copper nail marked "196.3"-----	196.17
Chehalis, 2.7 miles southeast of, 6 feet northwest of track, 30 feet southeast of road crossing; iron post stamped "Prim. Trav. Sta. No. 35, 233, 1912"-----	232.547

	Feet.
Chehalis, 4.1 miles southeast of, 10 feet east of track, on cement foundation of battery tank of Northern Pacific Electric signal tower; circle of paint marked "314.3"-----	314. 17
Chehalis, 5.5 miles southeast of, 5 feet southwest of track at road crossing; iron post stamped "Prim. Trav. Sta. No. 36, 392, 1912"-----	391. 982
Napavine, at first road crossing north of station, 10 feet east of track, in telegraph pole; copper nail marked "440.7"-----	440. 62
Napavine, 1 mile south of, 10 feet west of track, 15 feet south of road crossing; iron post stamped "Prim. Trav. Sta. No. 37, 442.6, 1912"-----	442. 546
Napavine, 2.1 miles southwest of, 15 feet north of road crossing, 3 feet northwest of track, in southwest side of cattle guard; copper nail marked "441.4"-----	441. 65
Napavine, 3 miles southwest of, near Evaline flag station, in northwest end of Northern Pacific bridge crossing over roadway, 8 feet west of track; copper nail marked "437.5"-----	437. 45
Napavine, 4.3 miles southwest of, 40 feet west of track, in telephone pole; copper nail marked "383.2"-----	383. 17
Winlock, 0.8 mile northeast of, 1 foot west of track, in northwest end of bridge over creek; copper nail marked "343.1"-----	343.03

From point 3 miles northeast of Cowlitz northeast to point near Olnebar.

Cowlitz, 3.8 miles northeast of, 15 feet northwest of T road intersection, in telegraph pole; copper nail marked "374.4"-----	374. 34
Cowlitz, 4.8 miles northeast of, 2 feet east of road, in telephone pole; copper nail marked "394.5"-----	394. 50
Cowlitz, 5.8 miles northeast of, 8 feet east of road, in telephone pole; copper nail marked "423.2"-----	423. 74
Cowlitz, 6.7 miles northeast of, 20 feet west of road, 112 feet south of walk leading to schoolhouse, in southeast corner of school yard; iron post stamped "Prim. Trav. Sta. No. 51, 451, 1912"-----	451. 242
Cowlitz, 7.9 miles northeast of, 20 feet west of road at T road south, in tree stump; copper nail marked "471.7"-----	471. 65
Cowlitz, 8.9 miles northeast of, 7 feet north of northwest corner of school yard; iron post stamped "Prim. Trav. Sta. No. 50, 1912"-----	510. 521
Cowlitz, 10 miles northeast of, north side of road, in tree stump; copper nail marked "546.5"-----	546. 47
Cowlitz, 11.1 miles northeast of, north side of road, in tree; copper nail marked "591.8"-----	591. 77
Cowlitz, 12 miles northeast of, 4 feet south of road, 20 feet southwest of crossroads; iron post stamped "Prim. Trav. Sta. No. 49, 622, 1912"-----	622. 363
Cowlitz, 12.4 miles northeast of, north side of road, 38 feet from road intersection, in tree; copper nail marked "648.5"-----	648. 44
Cowlitz, 13.3 miles northeast of, 20 feet north of road at T road south, in telephone pole; copper nail marked "551.0"-----	550. 99
Cowlitz, 13.5 miles northeast of, 15 feet south of road at T road intersection, in telephone pole; copper nail marked "561.8"-----	561. 74
Cowlitz, 14.8 miles northeast of, 10 feet south of road, in telephone pole; copper nail marked "668.9"-----	668. 90
Silver Creek, 840 feet south of, 30 feet northwest of crossroads; iron post stamped "Prim. Trav. Sta. No. 48, 678, 1912"-----	678. 415

	Feet.
Silver Creek, 1.2 miles northeast of, 10 feet west of road, in tree stump; copper nail marked "611.4"-----	611. 40
Silver Creek, 1.9 miles northeast of, 165 feet north of crossroads, 8 feet east of road, in tree stump; copper nail marked "585.4"-----	585. 45
Silver Creek, 3.7 miles northeast of, northeast side of road, in tree stump; copper nail marked "682.6"-----	682. 57
Silver Creek, 4.5 miles northeast of, 10 feet north of road at Y road; iron post stamped "Prim. Trav. Sta. No. 47, 731, 1912"-----	730. 853
Silver Creek, 5.7 miles northeast of, on east side of road, 30 feet from gate leading to house, in tree; copper nail marked "763.5"-----	763. 51

From Cinebar west to Chehalis.

Cinebar, 1.8 miles southwest of, 3 feet north of road, in telegraph pole; copper nail marked "806.7"-----	806. 70
Cinebar, 2.7 miles west of, 54 feet from road intersection, south side of road, in tree; copper nail marked "774.5"-----	774. 53
Alpha, 3.6 miles east of, 9 feet east of gate to school yard, 45 feet north of road; iron post stamped "Prim. Trav. Sta. No. 45, 750, 1912"-----	749. 902
Alpha, 2.5 miles east of, south side of road, in telephone pole; copper nail marked "704.7"-----	704. 74
Alpha, 1.4 miles east of, opposite T road north, in telephone pole; copper nail marked "706.8"-----	706. 80
Alpha, 0.3 mile west of, 30 feet south of road, in telephone pole; copper nail marked "821.8"-----	821. 86
Alpha, 0.8 mile west of, 10 feet north of road, northwest corner of T road north; iron post stamped "Prim Trav. Sta. No. 44, 785, 1912"-----	785. 044
Alpha, 2.1 miles northwest of, west side of road, in tree stump; copper nail marked "877.2"-----	877. 23
Alpha, 3 miles northwest of, northeast of road, in tree stump; copper nail marked "766.0"-----	766. 01
Alpha, 3.6 miles northwest of, southwest side of road, in tree stump; copper nail marked "594.6"-----	594. 67
Alpha, 4.4 miles northwest of, 12 feet west of road, opposite private gate to farmhouse; iron post stamped "Prim. Trav. Sta. No. 43, 607, 1912"-----	606. 598
Alpha, 5.8 miles northwest of, 10 feet east of road, 234 feet northwest of private gate to house, in tree stump; copper nail marked "425.3"-----	425. 32
Alpha, 6.9 miles northwest of, east side of road on edge, in tree stump; copper nail marked "388.8"-----	388. 88
Agate, 1 mile east of schoolhouse, 10 feet east of road, 75 feet southeast of T road intersection, in tree stump; copper nail marked "351.4"-----	351. 48
Agate school (district No. 205), 6 feet southwest of flagpole in school yard, 40 feet northwest of schoolhouse; iron post stamped "Prim. Trav. Sta. No. 42, 328, 1912"-----	328. 552
Agate, 1.2 miles west of, 6 feet south of road, 25 feet east of Shaver's gate, in tree stump; copper nail marked "312.0"-----	312. 07
Agate, 1.9 miles west of, 15 feet south of T road north, in root of tree; copper nail marked "300.5"-----	300. 61
Agate, 3.5 miles west of, in southeast corner of bridge near Forest; copper nail marked "274.6"-----	274. 69

Feet.

Forest, opposite side of road from store and post office, 1 foot south of fence corner, 30 feet north of T road intersection; iron post stamped "Prim. Trav. Sta. No. 41, 299, 1912"-----	298.801
Forest, 0.9 mile northwest of, 30 feet southwest of road, in front of Phillip's house near bridge over Newaukum River, in post; copper nail marked "261.4"-----	261.46
Forest, 2 miles northwest of, 12 feet northeast of road intersection, in post; copper nail marked "289.8"-----	289.89
Forest, 3.4 miles northwest of, 12 feet northeast of road, 15 feet northwest of bridge over creek, north of concrete road; iron post stamped "Prim. Trav. Sta. No. 40, 241, 1912"-----	241.210
Forest, 4.6 miles northwest of, 15 feet southwest of road, in telephone pole; copper nail marked "231.5"-----	231.56
Forest, 5.5 miles northwest of, 15 feet southeast of T road intersection, in pole; copper nail marked "224.8"-----	224.84
Chehalis, 15 feet east of road, 54 feet northeast of intersection of Market and Sixth streets, in telephone pole; copper nail marked "216.4"-----	216.49

From Centralia northwest 3 miles.

Centralia, 1.2 miles northwest of, 30 feet north of track, at road crossing, 50 feet northeast of railroad-crossing sign, in telegraph pole; copper nail marked "181.1"-----	181.0
Centralia, 2 miles northwest of, 75 feet south of road, 50 feet west of track at road crossing, in telegraph pole; copper nail marked "181.6"-----	181.55
Centralia, 3.1 miles northwest of, 30 feet east of track, in circle of paint on telegraph pole; nail marked "166.9"-----	166.86

From Littlerock northeast along Northern Pacific Ry. to point 2.6 miles north-east of Belmore.

Littlerock, 2.3 miles north of, 10 feet east of track and 6 feet south of road, in crossing signpost; copper nail marked "156.5"-----	156.35
Littlerock, 3.3 miles north of, at road crossing, 5 feet west of track, 6 feet south of road; iron post stamped "Prim. Trav. Sta. No. 28, 159, 1912"-----	158.831
Littlerock, 4.3 miles north of, 30 feet west of track, on telegraph pole, in circle of paint; nail marked "166.6"-----	166.45
Littlerock, 4.9 miles north of, 5 feet south of road at road crossing, 8 feet east of track, in crossing signpost; copper nail marked "167.0"-----	166.90
Littlerock, 5.9 miles north of, 30 feet west of track, on tree stump; nail in center of circle of paint, marked "162.6"-----	162.45
Belmore station, 9 feet west of track, south of station; iron post stamped "Prim. Trav. Sta. No. 29, 162, 1912"-----	161.523
Belmore, 0.7 mile north of, 10 feet west of track at road crossing, on railroad-crossing signpost; nail in circle of paint, marked "170.5"-----	170.33
Belmore, 1 mile north of, 10 feet west of track, 15 feet south of road crossing, on signpost, in circle of paint; nail marked "176.2"-----	176.02
Belmore, 1.6 miles north of, 5 feet east of track at switch spur leading to lumber mill south of road; iron post stamped "Prim. Trav. Sta. No. 30, 175, 1912"-----	174.940
Belmore, 2.6 miles northwest of, 30 feet west of track near private road crossing, in circle of paint on telephone pole; copper nail marked "147.0"-----	146.81

From Silver Creek east along highway to point near Mossyrock (leveled twice).

	Feet.
Silver Creek, 840 feet south of, 30 feet northwest of crossroads; iron post stamped "Prim. Trav. Sta. No. 48, 678, 1912"-----	678.415
Silver Creek, 0.9 mile east of, 20 feet west of road, 100 yards southwest of house, in bottom of telephone pole; copper nail marked "558.6"-----	557.49
Mayfield, 100 feet south of post office, at southwest corner of store, 40 feet southeast of road; iron post stamped "375"-----	373.621
Mayfield, 1.4 miles east of, 20 feet west of road, 200 yards northwest of house, in bottom of telephone pole; copper nail marked "386.6"-----	385.60
Mayfield, 2.2 miles east of, 10 feet southwest of road opposite clearing, in base of telephone pole; copper nail marked "522.3"-----	521.26
Mossyrock, 2.8 miles west of, 20 feet south of road near G. H. Hendrick's mail box; iron post stamped "577"-----	575.632
Mossyrock, 1.9 miles west of, 50 yards northeast of Klickitat School (district 206, ward 6), 20 feet north of road, in telephone pole; copper nail marked "592.6"-----	591.67

GATE QUADRANGLE.

[Latitude 46° 30'–47°; longitude 123°–123° 30'.]

From point 3 miles northwest of Centralia northwest along Northern Pacific Ry. to Gate, thence northeast to Littlerock.

Centralia, 4.5 miles northwest of, 9 feet southeast of private-road crossing, 5 feet east of track; iron post stamped "Prim. Trav. Sta. No. 22, 163, 1912"-----	163.084
Centralia, 5.4 miles northwest of, 10 feet east of track, 12 feet north of road, in railroad-crossing signpost; copper nail marked "161.3"-----	161.22
Centralia, 6.2 miles northwest of, 6 feet east of track, 25 feet north of road intersection; iron post stamped "Prim. Trav. Sta. No. 23, 162, 1912"-----	161.553
Centralia, 7 miles northwest of, 40 feet north of track and 30 feet northwest of road at crossing, in telephone pole; copper nail marked "161.7"-----	161.61
Centralia, 7.9 miles northwest of, in northeast corner of bridge crossing over private road; nail in circle of paint, marked "160.8"-----	160.69
Centralia, 8.9 miles northwest of, 40 feet east of track, on telegraph pole; nail in circle of paint, marked "159.2"-----	159.15
Centralia, 9.9 miles northwest of, 60 feet north of track near first milepost from Rochester, in gatepost of private road; copper nail marked "155.1"-----	155.03
Rochester, 90 feet west of station, 7 feet north of track; iron post stamped "Prim. Trav. Sta. No. 149, 1912"-----	148.673
Rochester, 0.5 mile west of, 10 feet north of track, 200 feet west of Milwaukee track, in railroad-crossing signpost; copper nail marked "141.9"-----	141.85
Rochester, 1.8 miles northwest of, 40 feet northeast of track, 10 feet east of private road at crossing, in stump; copper nail marked "113.3"-----	113.19
Gate, 0.2 mile northeast of, 10 feet north of track at Y; iron post stamped "Prim. Trav. Sta. No. 25, 122, 1912"-----	120.604

	Feet.
Gate, 1.4 miles northeast of, west of track, in telegraph pole; nail in circle of paint, marked "106.8"-----	106.86
Gate, 2.5 miles northeast of, 3 feet east of track, on northeast end of bridge; nail in circle of paint, marked "104.6"-----	104.50
Gate, 3.9 miles northeast of, 8 feet east of track, 20 feet southwest of road at crossing; iron post stamped "Prim. Trav. Sta. No. 26, 126, 1912"-----	125.736
Gate, 4.4 miles northeast of, on railroad-crossing signpost; copper nail in circle of paint, marked "134.5"-----	134.89
Gate, 5.7 miles northeast of, 40 feet north of track, on telephone pole; copper nail in circle of paint, marked "162.3"-----	162.22
Gate, 6.5 miles northeast of, 40 feet west of track, in telegraph pole; copper nail marked "144.6"-----	144.50
Littlerock, 60 feet north of station, 9 feet east of track at road crossing; iron post stamped "Prim. Trav. Sta. No. 27, 138, 1912"-----	137.608
Littlerock, 0.7 mile north of, 15 feet east of track, 15 feet south of road at crossing, in railroad-crossing signpost; copper nail marked "163.1"-----	162.97

KALAMA QUADRANGLE.

[Latitude 46°-46° 30'; longitude 122° 30'-123°.]

From Winlock southeast to Cowlitz, thence northeast 2.3 miles.

Winlock, 10 feet north of first road north of station, 10 feet west of track; iron post stamped "Prim. Trav. Sta. No. 39, 308, 1912"-----	307.660
Winlock, 1.4 miles east of, on north side of road, in telephone pole; copper nail marked "468.7"-----	468.60
Winlock, 1.8 miles east of, on south side of road, in tree stump; copper nail marked "460.8"-----	460.71
Winlock, 2.5 miles east of, in southeast corner of crossroads, in telephone pole; copper nail marked "448.4"-----	448.33
Winlock, 2.8 miles east of, southeast corner of T road, in telephone pole; copper nail marked "471.9"-----	471.87
Winlock, 3.5 miles southeast of, 500 feet west of bridge over Camas Creek, 12 feet south of road, beside telephone pole No. 3-10, opposite J. B. Woodward's garden; iron post stamped "Prim. Trav. Sta. No. 53, 301, 1912"-----	301.184
Winlock, 5 miles southeast of, 9 feet south of road, in telephone pole No. 4-24; copper nail marked "325.8"-----	325.71
Cowlitz, opposite county road from west at T road intersection near Pacific Highway post, in telephone pole; copper nail marked "323.3"-----	323.24
Cowlitz, 1.2 miles northeast of, at crossroads near group of R. F. D. mail boxes, in telephone pole; copper nail marked "340.9"-----	340.88
Cowlitz, 1.8 miles northeast of, 3 feet west of road opposite private-road crossing, in telephone pole; copper nail marked "347.8"-----	347.72
Cowlitz, 2.3 miles northeast of, 30 feet east of road forks; iron post stamped "Prim. Trav. Sta. No. 52, 352, 1912"-----	351.923

OLYMPIA QUADRANGLE.

[Latitude 47°-47° 15'; longitude 122° 45'-123°.]

From Tumwater north to Olympia, thence east along Northern Pacific Ry. to point 2 miles west of Sherlock.

	Feet.
Tumwater bridge over Deschutes River, in foundation of, 4 feet east of track; copper nail marked "88.8"-----	86.56
Tumwater bridge over Deschutes River, 600 feet north of, 6 feet east of track; iron post stamped "71"-----	70.583
Olympia, 6 feet northeast of Port Townsend Southern R. R. track, 40 feet northwest of Northern Pacific Ry. track, in top of embankment post; copper nail marked "10.4"-----	11.02
Belmore, 3.4 miles northwest of, 10 feet east of track, 10 feet north of road at road crossing, on signpost; nail in circle of paint, marked "130.9"-----	130.74
Olympia, at southwest corner of Main and Fourth streets, at entrance to stairway elevator of McKinney building; surface of second step (C. & G. S. b. m. No. 2. Coast and Geodetic Survey elevation 13.890 not used)-----	12.80
Olympia, southwest corner of Main and Fourth streets; surface of sidewalk (C. & G. S. b. m. No. 1. Coast and Geodetic Survey elevation 12.5 not used)-----	11.19
Olympia, 6 feet east of Northern Pacific Ry. track at Eighth Street crossing; iron post stamped "Prim. Trav. Sta. No. 13, 17, 1912"---	17.157
Olympia, where East Side street crosses Northern Pacific Ry. track, in base of electric track signal; copper nail marked "63.8"-----	64.22
Olympia, 1.5 miles east of, 21 feet north of track at road crossing, in telegraph pole; copper nail marked "120.7"-----	121.04
Olympia, 2.8 miles southeast of, 10 feet north of track at road crossing, in railroad-crossing sign; copper nail marked "200.7"-----	201.06
Lacey, 1 mile northwest of, 6 feet north of track at road crossing; iron post stamped "Prim. Trav. Sta. No. 14, 202, 1912"-----	202.566
Lacey, first road crossing east of station, 650 feet from station, 8 feet north of track; iron post stamped "Prim. Trav. Sta. No. 15, 184, 1912"-----	184.445
Lacey, second road crossing southeast of station, 0.2 mile east of, in east end of cattle guard, 2 feet northeast of track; copper nail marked "182.6"-----	183.01
Union Mills, 300 feet southeast of Northern Pacific Ry. ticket office, 60 feet northeast of track, on pole; copper nail marked "175.3"-----	175.73
Union Mills, 0.6 mile southeast of, 10 feet north of track at road crossing, in crossing sign; copper nail marked "198.0"-----	198.40
Union Mills, 2.8 miles northeast of, 12 feet from track, in track switch; copper nail marked "176.6"-----	177.01

TACOMA QUADRANGLE.

[Latitude 47°-47° 30'; longitude 122°-122° 30'.]

From Tacoma south along Northern Pacific Ry. to point 6 miles south of Lakeview (leveled twice).

Tacoma, at intersection of Twentieth and D streets and Jefferson Avenue, 1 mile from city hall, south of east side of Jefferson Avenue and opposite the Laurel rooming house (No. 1942), in bottom of telephone pole; copper nail marked "112.6"-----	112.65
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	Feet.
Tacoma, Center Street wagon bridge over Northern Pacific Ry. tracks, 6 feet north of tracks, southwest corner of foundation of bridge, in wooden pile; copper nail marked "214.0"-----	213.98
South Tacoma, 40 feet north of road crossing, on Northern Pacific Ry. track, in top of small stump; copper nail marked "249.9"-----	249.92
South Tacoma, first road crossing north of, at corner of station, 30 feet east of track, in telegraph pole; copper nail marked "253.5"---	253.65
South Tacoma, 66 feet south of Northern Pacific Ry. bridge crossing Lake Street car track, 90 feet north of road crossing, 15 feet east of track, in top of southwest concrete pier of bridge; aluminum tablet stamped "251"-----	251.007
Tacoma, 7.3 miles south of, at northeast corner of auto race track, 40 feet east of railroad track, at road crossing, north of road, in telegraph pole; copper nail marked "275.7"-----	275.68
Tacoma, 7.6 miles south of, at road crossing near Auto Club grandstand, 10 feet west of track, 4 feet south of railroad signpost; iron post stamped "P. T. Sta. No. 1, 272, 1912"-----	272.484
Lakeview, 1,000 feet south of station, 15 feet north of first road crossing south of station, between arms of Y of Northern Pacific tracks, 6 feet southeast of railroad signpost, 30 feet northwest of main line of railroad; iron post stamped "Prim. Trav. Sta. No. 2, 275, Wash., 1912"-----	275.270
Lakeview, 1.3 miles south of, 30 feet east of track at road crossing, in telegraph pole; copper nail marked "296.1"-----	296.33
Lakeview, 2.1 miles south of, at private-road crossing, 30 feet west of track, 30 feet south of road, in telegraph pole; copper nail marked "299.1"-----	299.36
Lakeview, 3.4 miles south of, 50 feet west of track, in telephone pole No. 38-18; copper nail marked "305.3"-----	305.65
Lakeview, 4.6 miles south of, 3 feet northeast of railroad-crossing sign, 6 feet west of track, 10 feet north of road; iron post stamped "Prim. Trav. Sta. No. 3, 329, 1912"-----	329.806
Lakeview, 6 miles south of, 150 feet south of private-road crossing, 30 feet east of track, in telegraph pole; copper nail marked "338.0"-----	338.30

Kalama and Mount St. Helens quadrangles.

COWLITZ AND LEWIS COUNTIES.

The elevations in the following list are the result of a single line of primary levels run with a yard rod and checked by side rod readings in double yards.

The leveling was done in 1913 by E. M. Bandli.

KALAMA QUADRANGLE.

[Latitude 46°-46° 30'; longitude 122° 30'-123°.]

From Winlock south along Northern Pacific Ry. to Castlerock, thence east along highways to St. Helens (part of a single spur line checked by side of rod notes).

	Feet.
Winlock, first road crossing north of, 10 feet west of track and 10 feet north of road; iron post stamped "308"-----	307.660

	Feet.
Winlock, 0.8 mile southwest of, 50 feet south of railroad crossing, 10 feet west of track, on base of signal tower 68-9; circle of paint marked "278.0"-----	278. 04
Winlock, 1.8 miles southwest of, at Capital Mill spur, 9 feet west of track, on base of signal block; circle of paint marked "258.5"-----	258. 46
Winlock, 3.2 miles south of, 12 feet north of road and 15 feet west of track at railroad crossing; iron post stamped "206"-----	205. 498
Winlock, 4.5 miles south of, 30 feet east of track, in telegraph pole opposite pole 30-36; copper nail marked "183.6"-----	183. 55
Vader, 1 mile north of, 30 feet east of track, in telephone pole opposite station milepost; copper nail marked "158.3"-----	158. 29
Vader, in front of station; top of rail-----	141. 6
Vader, 200 feet south of, 15 feet north of first road crossing, 30 feet west of main track, near railroad sign; iron post stamped "139"---	139. 332
Vader, 1.2 miles south of, 15 feet east of track; tag in pole marked "127.8"-----	127. 79
Olequa, in front of station; top of rail-----	112. 7
Olequa, opposite station at road crossing, 50 feet east from station, in corner fence post; copper nail marked "109.1"-----	109. 08
Cowlitz River, surface of water under Northern Pacific Ry. bridge; May 29, 1913-----	52. 5
Olequa, 1 mile south of, in northeast corner of north pier of Northern Pacific Ry. bridge over Cowlitz River (bridge No. 95), 10 feet east of track, in top of pier; bronze tablet stamped "96"-----	96. 405
Olequa, 2.1 miles south of, 20 feet east of track, on first pole north of private-road crossing; copper nail marked "84.9"-----	84. 84
Olequa, 3 miles south of, 25 feet east of track, in telephone pole 22-36; copper nail marked "83.8"-----	83. 72
Olequa, 4 miles south of, on concrete base of block signal near private-road crossing; circle of paint marked "72.5"-----	72. 44
Toutle River, under Northern Pacific Ry. bridge; surface of water May 30, 1913-----	38. 8
Olequa, 4.5 miles south of, at northeast corner of north pier of bridge 101 over Toutle River, 10 feet east of Northern Pacific Ry. track, in top of pier; bronze tablet stamped "69" (?)-----	64. 763
Castle Rock, 1.3 miles north of, on east side of track, in signal block foundation; copper nail marked "59.5"-----	59. 46
Castle Rock, 0.4 mile north of, at fork of road, 11 feet north of telephone pole 1496, 15 feet east of road; iron post stamped "120"-----	120. 033
Castle Rock, 1.7 miles east of, along Silver Lake road, 20 feet from center of road, in telephone pole; copper nail marked "361.1"-----	361. 04
Castle Rock, 2 miles east of, 70 feet northeast of T-road intersection, in telephone pole; copper nail marked "448.8"-----	448. 86
Castle Rock, 2.3 miles east of, 25 feet south of Y-road intersection, in telephone pole; copper nail marked "488.9"-----	488. 97
Castle Rock, 4 miles northeast of, 10 feet south of road, 6 feet east of telephone pole; iron post stamped "566"-----	565. 834
Castle Rock, 5 miles east of, 45 feet northeast of road intersection, in telephone pole; copper nail marked "591.0"-----	591. 06
Silver Lake, 0.5 mile west of, 30 feet south of road, in telephone pole; copper nail marked "501.3"-----	501. 36
Silver Lake, at high school, in southwest corner, 1.5 feet south by 1 foot east of corner; iron post stamped "519"-----	518. 911

	Feet.
Silver Lake, 1 mile east of, 10 feet south of road, near Parker's mail box, on telephone pole; copper nail marked "500.5"-----	500.56
Silver Lake, 2 miles east of, 20 feet north of T-road intersection, at end of long bridge, in root of fir tree; copper nail marked "492.1"-----	492.13
Silver Lake, 3 miles east of, in front of Mange's house, 20 feet east of road to house, 10 feet south of highway; iron post stamped "491"-----	490.707
Silver Lake, 3.8 miles east of, at T-road intersection, in root on south side of big fir tree; copper nail marked "495.0"-----	495.02
Silver Lake, 4.6 miles east of, 30 feet north of T-road intersection, in root of fir tree; copper nail marked "490.6"-----	490.60
Toutle, 0.9 mile west of, 25 feet east of road at T-road intersection, near three mail boxes; iron post stamped "516"-----	515.752
Toutle River, near Toutle; surface of water June 6, 1913-----	442.5
Toutle, 0.5 mile west of, north side of road fork to west, 30 feet west of county road, in top of cedar stump; copper nail marked "461.9"-----	461.88
Toutle, 100 feet southwest of post office, in telephone pole; copper nail marked "500.2"-----	500.18
Toutle, 0.7 mile east of, 20 feet northeast of T road north, in base of maple tree; copper nail marked "546.8"-----	546.82
Toutle, 0.7 mile east of, 25 feet south of county road, opposite T road north, 15 feet east of fir witness tree; iron post stamped "545"-----	545.236
Toutle, 1.7 miles east of, 10 feet south of center of county road, 10 feet west of fork of road north, in small alder tree; copper nail-----	570.35
Toutle, 3.7 miles east of, along county road, 20 feet northwest of crossroads, 3 feet northeast of Kid Valley signpost; iron post stamped "828"-----	827.919
Toutle, 5 miles east of, 12 feet north of road at curve, in top of 2-foot stump; copper nail marked "833.2"-----	833.28
Toutle, 6.4 miles east of, 10 feet north of road, near school building, on root of 18-inch fir tree; circle of paint marked "792.2"-----	792.28
Toutle, 7.7 miles east of, at end of Kid Valley road, at Chism's ranch, northeast of road, in top of 2½-foot fir stump; copper nail marked "721.8"-----	721.85
Toutle, 8 miles east of, on east bank of North Fork of Toutle River, at Chism's boat crossing, in vertical face of ledge of rock, 8 feet above surface of water; bronze tablet stamped "873"-----	872.594
Toutle River, at Chism's Crossing; surface of water June 11, 1913-----	665
Toutle, 8.4 miles east of, 0.25 mile east of North Fork of Toutle River at intersection of private road and trail, in circle of paint on 2-foot fir tree; copper nail marked "879.6"-----	879.74
St. Helen, 4.7 miles northwest of, 20 feet southeast of junction of road with T road northeast, in cedar stub 8 feet in diameter; copper nail marked "893.1"-----	893.25
St. Helen, 3 miles west of, on south side of county road, in root of 5-foot fir tree; copper nail marked "1074.1"-----	1,074.19
St. Helen, 3 miles west of, 5 feet north of county road; iron post stamped "1078"-----	1,077.890
St. Helen, 1.9 miles northwest of, northeast of road, in root of fir tree 6 feet in diameter; copper nail marked "1109.8"-----	1,109.89

Feet.

St. Helen, 0.7 mile northwest of, 15 feet east of road, 20 feet north of stream near Pullen's barn, in root of 18-inch cedar stump; copper nail marked "1018.3"-----	1,018.43
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MOUNT ST. HELENS QUADRANGLE.

[Latitude 46°-46° 30'; longitude 122°-122° 30'.]

From St. Helen east along highways to Spirit Lake, thence northeast to Green River (part of a single spur line checked by side of red notes).

St. Helen, 0.2 mile west of, 10 feet north of road, northwest of road intersection; iron post stamped "952"-----	952.187
St. Helen, 1.3 miles east of, on county road to Spirit Lake, 10 feet northeast of road, in root of 6-foot fir tree; copper nail marked "990.4"-----	990.53
St. Helen, 2.3 miles east of, on county road to Spirit Lake, 6 feet south of road, in root of 2-foot hemlock tree; copper nail marked "1041.1"-----	1,041.23
St. Helen, 3 miles east of, 15 feet south of road, 60 feet south of old cabin, 150 feet north of river; iron post stamped "1098"-----	1,097.962
St. Helen, 3.9 miles east of, at road intersection, in root of 2-foot fir tree; copper nail marked "1131.4"-----	1,131.55
St. Helen, 5.1 miles east of, at skid road crossing, in root of 18-inch hemlock tree; copper nail marked "1218.6"-----	1,218.78
St. Helen, 6.3 miles east of, 5 feet south of road near river bank; iron post stamped "1308"-----	1,307.708
St. Helen, 7.3 miles east of, 3.7 miles west of Elk Creek, on north side of road, in root of 10-inch maple tree; copper nail marked "1381.5"-----	1,381.71
Elk Creek, 2.7 miles west of, on west side of road, in root of 14-inch fir tree; copper nail marked "1458.3"-----	1,458.52
Elk Creek, 1.6 miles west of, 10 feet southwest of road, 75 feet in front of log cabin; iron post stamped "1583"-----	1,583.181
Elk Creek, 1.1 miles west of, on south side of road at private road intersection, in root on north side of 14-inch cedar tree; copper nail marked "1643.0"-----	1,643.21
Elk Creek, south side of road, at private road intersection, in root on north side of 18-inch hemlock tree; copper nail marked "1740.8"-----	1,741.02
Elk Creek; surface of water June 20, 1913-----	1,711
Elk Creek, 1.2 miles east of, on south side of road, in root of 16-inch cedar tree, on circle of paint; copper nail marked "1859.9"-----	1,860.16
Elk Creek, 1.8 miles east of, 15 feet south of road, near river, in top of large bowlder; bronze tablet stamped "1930"-----	1,930.674
Elk Creek, 2.9 miles east of, on south side of road, in root of 17-inch cottonwood tree; copper nail marked "2060.9"-----	2,061.22
Elk Creek, 3.8 miles east of, on southwest side of road, in cottonwood tree 2.5 feet in diameter, in root; copper nail marked "2188.3"-----	2,188.57
Elk Creek, 4.1 miles east of, 30 feet southwest of road, in top of large bowlder; bronze tablet stamped "2228"-----	2,228.108
Elk Creek, 5.3 miles east of, 10 feet north of road, in root of 9-inch fir tree; copper nail marked "2405.4"-----	2,405.77
Elk Creek, 6.1 miles east of, 8 feet north of road, 100 feet northeast of ranger's house, in root of 11-inch pine tree; copper nail marked "2547.9"-----	2,548.22

	Feet.
Elk Creek, 6.8 miles east of, 40 feet north of road, 100 feet east of Bright's house, in top of large bowlder; bronze tablet stamped "2678"-----	2, 678. 497
Spirit Lake, 2.8 miles west of, 4 feet north of road, in root of 18-inch hemlock tree; copper nail marked "2848.0"-----	2, 848. 42
Spirit Lake, 1.7 miles west of, 15 feet southeast of road, in root of 2-foot fir tree; copper nail marked "3090.0"-----	3, 090. 48
Spirit Lake, 0.8 mile west of, 10 feet north of road, in southeast face of large bowlder; bronze tablet stamped "3179"-----	3, 179. 805
Spirit Lake, 0.2 mile west of, on south side of road, at T road intersection, in root of 3.5-foot hemlock tree; copper nail marked "3238.8"-----	3, 239. 24
Spirit Lake, near outlet, 10 feet from south shore of lake, in root of 14-inch hemlock tree; copper nail marked "3202.7"-----	3, 203. 16
Spirit Lake; surface of water July 3, 1913-----	3, 198. 88
Spirit Lake; surface of water July 5, 1913-----	3, 198. 80
Spirit Lake, 100 yards from northeast end of, at old camp, 50 feet east of log cabin, 80 feet northwest of creek at trail and road intersection; iron post stamped "3204"-----	3, 205. 036
Spirit Lake, 1 mile north of, on trail over Norway Pass, 5 feet east of pass, in root of 2-foot fir tree; copper nail marked "3689.4"-----	3, 689. 83
Spirit Lake, 1.9 miles northeast of, on summit of pass, 6 feet west of trail, in root of 2.5-foot hemlock tree; copper nail marked "4505.1"-----	4, 505. 79
Spirit Lake, 2.7 miles north of, 5 feet east of path, in root of 2.3-foot dead fir tree; copper nail marked "3792.8"-----	3, 793. 31
Spirit Lake, 2.7 miles north of, 5 feet east of path, in root of 2.3-foot dead fir tree; copper nail marked "3792.8"-----	3, 793. 31
Spirit Lake, 3.4 miles north of, east side of trail, in face of rock ledge 5 feet above trail; bronze tablet stamped "3542"-----	3, 542. 182
Spirit Lake, 4.5 miles north of, on southeast edge of trail, in root of 1.7-foot fir tree, in circle of paint; copper nail marked "3164.5"-----	3, 164. 90
Spirit Lake, 5.3 miles north of, 15 feet east of trail, in root of 2-foot hemlock tree, in circle of paint; nail marked "2878.575"-----	2, 878. 92
Spirit Lake, 6.3 miles north of, 15 feet west of Green River, near camping place, 9 feet west of cedar tree with painted elevation "2846.6"; iron post stamped "2847"-----	2, 846. 980
Spirit Lake, 7.2 miles northeast of, 0.8 mile northeast of river, in Box Canyon trail, in root of 2-foot hemlock tree; copper nail marked "3174.4"-----	3, 174. 79

Cape Elizabeth, Humpulips, Montesano, and Point Hanson quadrangles.

CHEHALIS AND PACIFIC COUNTIES.

The following elevations were determined by primary leveling and accord with heights given for tidal bench marks of the Coast and Geodetic Survey at West Aberdeen and Damon Point.

The leveling was done in 1911 by G. L. Hagman.

MONTESANO QUADRANGLE.

[Latitude 46° 30'–47°; longitude 123° 30'–124°.]

From West Aberdeen west along electric railway through Hoquiam to point 1.9 miles west of Grays Harbor City.

	Feet.
West Aberdeen, about 110 feet from end of wharf, in road which formerly led directly away from it, in cement monument 9 inches square and 3 feet long and projecting about 2 inches above ground, N. 3° E. distant 57 feet and 4 inches is southwest corner of small house on shore just above end of wharf; copper bolt (C. & G. S. b. m. 1)-----	6. 260
West Aberdeen, 1 mile east of, at milepost C 54, in base of signboard; spike, aluminum tag stamped "8 1"-----	8. 120
South Aberdeen, 0.8 mile west of station, where railroad is crossed by planked road, on south side of railroad, in base of telegraph pole; spike, aluminum tag stamped "7 2"-----	6. 56
South Aberdeen, south end of toll bridge at northwest corner of railroad crossing, in base of telegraph pole; spike, aluminum tag stamped "7 3"-----	7. 062
North Aberdeen, about 200 feet north of end of toll bridge, at northwest street corner, in base of telephone pole; spike, aluminum tag stamped "8 4"-----	7. 79
Aberdeen, west side of main entrance to city hall, in top of corner stone; aluminum tablet stamped "10 Wa 1911"-----	9. 768
Aberdeen, 1 mile west of, where road turns west, at west side of electric railway, in base of telegraph pole; spike, aluminum tag stamped "6 5"-----	6. 36
Aberdeen, 1.6 miles west of, southeast corner of railway crossing, 25 feet south of railway, on east side of road, on top of plank; painted ring, aluminum tag stamped "7 6"-----	6. 83
Hoquiam, in top of step east of front entrance to Washington School; aluminum tablet stamped "8 Wa 1911"-----	7. 507
Hoquiam, at north end of bridge over Hoquiam River, on west side of bridge pile; copper nail in top, aluminum tag stamped "13 7"-----	12. 91
Hoquiam, at northwest corner of M and Emerson streets, in base of telephone pole; spike, aluminum tag stamped "5 8"-----	5. 47
Hoquiam, 2.2 miles west of, on Northern Pacific Ry., 1,150 feet west of milepost 8, 20 feet west of shooting platform, 25 feet south of center of railroad; iron post stamped "10 Wa 1911"-----	10. 369
Grays Harbor City, 1.1 miles east of, opposite milepost 9, in base of telegraph pole; spike, aluminum tag stamped "9 9"-----	8. 65
Grays Harbor City, on south side of railroad, in base of telegraph pole; spike, aluminum tag stamped "12 10"-----	12. 04
Grays Harbor City, 1 mile west of, 27 feet north of milepost 11; iron post stamped "13 Wa 1911"-----	13. 136
Grays Harbor City, 1.9 miles west of, 200 feet west of milepost 12, south side of railroad, in base of telegraph pole; spike, aluminum tag stamped "12 12"-----	12. 06
From West Aberdeen west to Markham (part of double spur line).	
West Aberdeen, 1.1 miles west of; spike in base of milepost C 56, painted and scribed "U. S. B. M. 9"-----	8. 576
West Aberdeen, 2.1 miles west of; spike in base of milepost C 57, painted and scribed "U. S. B. M. 8"-----	7. 87

Feet.

Markham, 6 miles east of, at bottom of west slope of small hill, 80 feet west of good spring, 6 feet south of edge of plank road; iron post stamped "12 Wa 1911"-----	12. 532
Markham, 5.5 miles east of; spike in base of milepost C 58, painted and scribed "U. S. B. M. 8"-----	8. 14
Markham, 4.5 miles east of; spike in base of milepost C 59, painted and scribed "U. S. B. M. 8"-----	7. 88
Markham, 3.5 miles east of; spike in base of milepost C 60, painted and scribed "U. S. B. M. 11"-----	11. 12
Markham, 2.5 miles east of, 65 feet west of milepost 61 C, 18 feet south of center of railroad; iron post stamped "13 Wa 1911"-----	13. 400
Markham, 1.5 miles east of; spike in base of milepost C 62, painted and scribed "U. S. B. M. 11"-----	10. 56
Markham, 0.5 mile east of, 115 feet west of milepost C 63; spike in base of telephone pole, painted and scribed "U. S. B. M. 9"-----	9. 01
Markham, in southwest corner of front yard of the Watson residence, in top of rock set 2 feet in ground and projecting 2 inches above surface; aluminum tablet stamped "9 Wa 1911"-----	8. 575

From West Aberdeen south to Newkah (double spur line).

West Aberdeen, 1.8 miles south of, at bend in road, near shack, on west side of road; spike in base of alder tree, painted and scribed "U. S. B. M. 24"-----	23. 844
West Aberdeen, 3 miles south of, on south side of road; spike in base of stump, painted and scribed "U. S. B. M. 51"-----	50. 70
West Aberdeen, 3.5 miles south of, about 480 feet southeast of house, on west side of road; spike in base of hemlock tree, painted and scribed "U. S. B. M. 55"-----	54. 83
Newkah School, 0.7 mile south of, north side of road; copper nail in stump of big dead tree, painted and scribed "U. S. B. M. 102"-----	101. 93
West Aberdeen, 5 miles south of, at old Newkah post office, 50 feet northeast of Powell's residence, in fence corner; iron post stamped "75 Wa 1911"-----	75. 259

From West Aberdeen southeast along highway to Arctic (double spur line).

South Aberdeen, at south end of toll bridge, northwest corner of railroad crossing; spike in base of telephone pole, aluminum tag stamped "7 3"-----	7. 062
Cosmopolis, 0.8 mile west of, about 200 feet south of slough crossing, at end of plank road, on west side of railway; spike in base of telephone pole, painted and scribed "U. S. B. M. 7"-----	6. 84
Cosmopolis, in northeast corner of school lot; iron post stamped "9 Wa 1911"-----	8. 568
Cosmopolis, 0.95 mile east of, on south side of road; spike in base of stump, painted and scribed "U. S. B. M. 16"-----	15. 50
Cosmopolis, 2 miles east of, south side of railroad; spike in base of big burnt stump, painted and scribed "U. S. B. M. 18"-----	18. 29
Cosmopolis, 2.8 miles east of, 75 feet south of center of track; iron post stamped "65 Wa 1911"-----	64. 647
Cosmopolis, 3.9 miles east of, north side of railroad; spike in base of large cedar stump, painted and scribed "U. S. B. M. 117"-----	116. 58
Cosmopolis, 4.9 miles east of, on south side of railroad; spike in base of big stump, painted and scribed "U. S. B. M. 145"-----	145. 26

	Feet.
Cosmopolis, 5.8 miles southeast of, at east side of railroad, near north end of siding; copper nail in top of stump, painted and scribed "U. S. B. M. 128"-----	128.38
Cosmopolis, 6.8 miles southeast of, east side of railroad; spike in base of stump, painted and scribed "U. S. B. M. 115"-----	115.28
Arctic, at southeast corner of road forks; iron post stamped "104 Wa 1911"-----	104.077

From West Aberdeen east along highways to Montesano.

Aberdeen, 1 mile east of toll bridge, at end of planked road, north side of road; spike in base of telephone pole, painted and scribed "U. S. B. M. 10"-----	10.28
Junction City, 15 feet north of bridge over slough, 8 feet east of edge of road; iron post stamped "10 Wa 1911"-----	9.830
Junction City, 1 mile east of, 55 feet east of bridge over slough, at south side of road; copper nail in root of stump, painted and scribed "U. S. B. M. 8"-----	7.94
Junction City, 2 miles east of, 30 feet west of bridge over slough; copper nail in root of big stump, painted and scribed "U. S. B. M. 9"-----	9.18
Junction City, 3 miles east of, 100 feet north of track, on north side of highway at railroad crossing; iron post stamped "13 Wa 1911"-----	13.297
Montesano, 5.8 miles west of, west side of road; spike in base of tall burnt stump, painted and scribed "U.S.B.M. 105"-----	104.93
Montesano, 4.8 miles west of, south side of railroad, east side of road at railroad crossing; spike in base of telephone pole, painted and scribed "U. S. B. M. 9"-----	9.26
Montesano, 3.8 miles west of, south side of road; spike in base of fence post, painted and scribed "U. S. B. M. 8"-----	7.76
Montesano, 2.8 miles west of, 200 feet southeast of milepost 44, 0.25 mile west of Alder Grove School, southeast corner of second class crossroads; iron post stamped "12 Wa 1911"-----	11.598
Montesano, 1.7 miles west of, wagon bridge over Wynooche River, in top of southeast abutment; chisel mark "U. S. $\square$ B. M."-----	24.92
Montesano, 1.2 miles west of, near Fairview School, at southeast corner of road forks; spike in base of fence post, painted and scribed "U. S. B. M. 51"-----	51.54
Montesano, at front entrance to Chehalis County courthouse, in top of southwest corner of lower granite step; aluminum tablet stamped "65 Wa 1911". (On spur line.)-----	64.958

HUMPTULIPS QUADRANGLE.

[Latitude 47°-47° 30'; longitude 123° 30'-124°.]

From point 2.3 miles northwest of Montesano north along highways to Wishkah.

Montesano, 2.3 miles northwest of, where road is crossed by small stream, on west side of road; spike in base of telephone pole, painted and scribed "U. S. B. M. 25"-----	24.61
Montesano, 3.2 miles northwest of, on west side of road; spike in base of telephone pole, painted and scribed "U. S. B. M. 55"-----	55.21
Montesano, 4.3 miles northwest of, at Black Creek Ferry, on west side of road, under maple tree; iron post stamped "43 Wa 1911"-----	42.755

	Feet.
Montesano, 5.8 miles northwest of, at entrance to Mobray Farm; spike in base of gatepost, painted and scribed "U. S. B. M. 76"-----	76. 17
Montesano, 7 miles northwest of, opposite Taylor's residence, on west side of road; spike in base of fence post, painted and scribed "U. S. B. M. 58"-----	57. 73
Montesano, 8.2 miles northwest of, at northwest corner of private T road west; iron post stamped "74 Wa 1911"-----	73. 690
Montesano, 9.2 miles northwest of, on east side of road; spike in base of gatepost, painted and scribed "U. S. B. M. 77"-----	77. 06
Montesano, 10 miles northwest of, on west side of road, near small drain crossing; spike in base of burnt stump, painted and scribed "U. S. B. M. 144"-----	143. 86
Montesano, 10.5 miles northwest of, northwest corner of T road west; iron post stamped "154 Wa 1911"-----	154. 174
Wishkah, 5.3 miles east of, at gate to Armstrong ranch; spike in base of gatepost, painted and scribed "U. S. B. M. 107"-----	106. 85
Wishkah, 4 miles east of, south side of road; spike in base of hemlock tree, painted and scribed "U. S. B. M. 427"-----	427. 54
Wishkah, 3 miles east of, north side of road near ridge top; copper nail in base of big fir stump, painted and scribed "U. S. B. M. 439"-----	439. 84
Wishkah, 1.9 miles east of, on east side of road, where it makes sharp bend; spike in base of burnt stump, painted and scribed "U. S. B. M. 267"-----	266. 67
Wishkah, 150 feet west of bridge over east fork of Wishkah River, at southwest corner of road forks; spike near top of stump, painted and scribed "U. S. B. M. 26"-----	25. 83
Wishkah, steel bridge over Wishkah River, in top of southwest pier; aluminum tablet stamped "26, 1911"-----	26. 389

From Aberdeen northeast along highways to Wishkah.

Aberdeen, 1 mile north of, south of road forks, on west side of road; spike in base of telephone pole, painted and scribed "U. S. B. M. 31"-----	30. 66
Aberdeen, 2 miles north of, on east side of road; spike in base of telephone pole, painted and scribed "U. S. B. M. 21"-----	21. 37
Aberdeen, 3 miles north of, 45 feet northeast of district school No. 10, on west side of road; iron post stamped "13 Wa 1911"-----	12. 686
Aberdeen, 4 miles north of, on east side of road, at edge of river; spike in base of telephone pole, painted and scribed "U. S. B. M. 6"-----	5. 65
Aberdeen, 5.2 miles north of, on east side of road; spike in base of telephone pole, painted and scribed "U. S. B. M. 8"-----	8. 25
Aberdeen, 6.2 miles north of, 200 feet north of road leading to A. F. Coates Logging Co., 15 feet west of edge of planked road; iron post stamped "24 Wa 1911"-----	24. 065
Aberdeen, 6.8 miles north of, on northeast corner of road forks; copper nail in root of big stump, painted and scribed "U. S. B. M. 67"-----	67. 35
Aberdeen, 8 miles north of, 1,000 feet north of Monarch Co.'s log chute crossing road, on east side of road; spike in base of alder tree, painted and scribed "U. S. B. M. 16"-----	15. 69
Wishkah, steel bridge over Wishkah River, in top of southwest pier; aluminum tablet stamped "26, 1911"-----	26. 389

From Hoquiam north along highways 11 miles (single spur line).

	Feet.
Hoquiam, bridge over Hoquiam River, on west side of bridge, at north end, in top of pile; copper nail, aluminum tag stamped "13 7"-----	12.909
Hoquiam, 1 mile north of, at T road west, just south of Lincoln school, east side of road; spike in base of telephone pole, painted and scribed "U. S. B. M. 9"-----	9.083
Hoquiam, 2 miles north of, at mouth of Little Hoquiam River; at west end of bridge, 15 feet south of edge of road; iron post stamped "16 Wa 1911"-----	16.123
Hoquiam, 3 miles north of, where road turns slightly west, at east side of road; spike in base of telephone pole, painted and scribed "U. S. B. M. 7"-----	7.308
Hoquiam, 4 miles north of, west side of road; spike in base of telephone pole, painted and scribed "U. S. B. M. 7"-----	6.683
Hoquiam, 5 miles north of, south of junction of Humptulips and Moclips roads, in top of southeast pier of steel bridge; aluminum tablet stamped "10 Wa 1911"-----	9.723
Hoquiam, 5.9 miles north of, near abandoned barn, east side of road; spike in base of telephone pole, painted and scribed "U. S. B. M. 14"-----	13.805
Hoquiam, 6.9 miles north of, west side of road; copper nail in root of burnt stump, painted and scribed "U. S. B. M. 28"-----	27.982
Hoquiam, 8 miles north of, 65 feet north of bridge over Hoquiam River, 9 feet east of edge of road; iron post stamped "42 Wa 1911"-----	42.066
Hoquiam, 9.8 miles north of, on west side of road; spike near top of stump, painted and scribed "U. S. B. M. 276"-----	275.643
Hoquiam, 10.7 miles north of, in southwest corner of road forks; iron post stamped "307 Wa 1911"-----	306.900

CAPE ELIZABETH QUADRANGLE.

[Latitude 47°-47° 30'; longitude 124°-124° 30'.]

From point 2.8 miles west of Grays Harbor City north along Northern Pacific Ry., thence south along highways to point 3 miles north of Damon Point.

Grays Harbor City, 2.8 miles northwest of, opposite milepost 13, on east side of railroad; spike in base of telephone pole, aluminum tag stamped "9 13"-----	8.61
Grays Harbor City, 3.9 miles northwest of, 180 feet south of milepost 14, 320 feet north of end of bridge over Grass Creek, at east edge of right of way, in fence corner; iron post stamped "6 Wa 1911"-----	6.297
Gray Gables, in front of station; top of rail-----	12.34
Chenais Creek, 1 mile south of, opposite milepost 15; spike in base of telephone pole, aluminum tag stamped "15 14"-----	15.12
Chenais Creek, 120 feet south of station, opposite milepost 16; spike in base of telephone pole, aluminum tag stamped "11 15"-----	11.40
Chenais Creek, 1 mile north of; spike in milepost 17, 1 foot above ground, aluminum tag stamped "7 16"-----	7.04
Burrows, 30 feet south of station, 12 feet west of center of track, on station fill; iron post stamped "17 Wa 1911"-----	17.402

	Feet.
Tulips, opposite station; spike in base of telephone pole, painted and scribed "U. S. B. M. 17"-----	16.74
Tulips, at railroad crossing; top of rail-----	20.13
Newton, at railroad crossing; top of rail-----	23.19
Newton, 0.3 mile north of, where road bends west; spike in base of fence post, painted and scribed "U. S. B. M. 19"-----	18.59
Wilderness, at railroad crossing; top of rail-----	39.42
Wilderness, 0.4 mile north of, bridge over Humptulips River, in top of southeast pier; aluminum tablet stamped "37 Wa 1911"-----	37.130
Copalis Crossing, 0.6 mile east of station, on south side of road, at T road north; spike in base of stump painted and scribed "U. S. B. M. 75"-----	75.47
Copalis Crossing, 0.5 mile west of where abandoned road turns off south, on north side of road; spike in base of stump, painted and scribed "U. S. B. M. 71"-----	70.93
Copalis Crossing, 1.4 miles west of, on south side of road; spike in base of stump, painted and scribed "U. S. B. M. 176"-----	175.60
Copalis Crossing, 1.7 miles west of, north side of road, near top of Langley Hill; spike in base of short stump, painted and scribed "U. S. B. M. 203"-----	202.63
Copalis Crossing, 1.7 miles west of, about 250 feet south of road, on top of wooded hill on which is situated Coast and Geodetic Survey triangulation station "Langley," in rock about 2 inches above ground under observation tower; brass tablet, stamped "257" (C. & G. S. triangulation point)-----	256.666
NOTE.—Bench mark is set on checked spur line.	
Copalis, 2.2 miles east of, on north side of road; spike in base of stump, painted and scribed "U. S. B. M. 54"-----	53.66
Copalis, 1.2 miles east of, 0.2 mile west of place where road bends south and private road goes north, north side of road; spike in base of stump, painted and scribed "U. S. B. M. 40"-----	40.00
Copalis, 0.25 mile east of, near top of rise, south side of road; spike in base of large stump, painted and scribed "U. S. B. M. 42"-----	41.58
Copalis School, in northwest corner of yard; iron post stamped "24 Wa 1911"-----	23.621
Copalis, 1 mile south of, on beach, near first shack south of Copalis; spike in base of corner fence post, painted and scribed "U. S. B. M. 16"-----	16.14
Copalis, 2.1 miles south of, on beach among drift; spike in base of big stump, painted and scribed "U. S. B. M. 9"-----	9.46
Copalis, 2.5 miles south of, north end of gate to private road leaving beach, near new shed; spike in base of fence post, painted and scribed "U. S. B. M. 17"-----	16.75
Copalis, 3.6 miles south of, on high bank where beach is crossed by Thompson Creek, marked by camp site; spike in base of small spruce tree near temporary shack, painted and scribed "U. S. B. M. 28"-----	28.49
Copalis, 4.9 miles south of, on small knoll, at brush line opposite two hunting tripods on beach, 160 feet south of Axtell cabin, 45 feet south of blazed spruce tree (site marked by black and white flag on pole); iron post stamped "20 Wa 1911"-----	20.116
Copalis, 6.1 miles south of, on beach opposite house; spike in base of 10 by 10 inch post, painted and scribed "U. S. B. M. 7"-----	6.86

	Feet.
Copalis, 7.6 miles south of, on beach; copper nail in root of big tree stump, painted and scribed "U. S. B. M. 9"-----	8. 58
Copalis, 8.1 miles south of, on Oyhut road, about 1,400 feet east of beach, north side of road, 9 feet west of blazed spruce tree painted and scribed "B.M. (—→)"; iron post stamped "19 Wa 1911"---	18. 676
Copalis, 9.1 miles south of, just inside of drift line, the third from one farthest south of a line of fence posts; spike in base of fence post, painted and scribed "U. S. B. M. 12"-----	12. 25
Copalis, 9.9 miles south of, just inside of drift line; spike in base of northeast corner of white hunting tower, painted and scribed U. S. B. M. 11 "-----	11. 41
Copalis, 11.2 miles south of, about 0.9 mile north of Walker Cabin, about 1 mile northeast of hunting tripod on beach; spike in base of small spruce tree, painted and scribed "B. M. 11" (to spruce tree is nailed a tall pole with black and white flag)-----	10. 73

POINT HANSON QUADRANGLE.

[Latitude 46° 30'–47°; longitude 124°–124° 30'.]

From Markham west along Northern Pacific Ry. to Ocosta.

Markham, 0.5 mile west of; spike in base of milepost 64, painted and scribed "U. S. B. M. 11"-----	11. 14
Ocosta, 0.7 mile east of; spike in base of first telephone pole west of milepost 65, painted and scribed "U. S. B. M. 9"-----	8. 68
Ocosta, about 300 feet south of station, 45 feet south of end of bridge over Redman Creek, 15 feet west of edge of road; iron post stamped "6 Wa 1911"-----	6. 373

From point 3 miles north of Damon Point south to Damon Point.

Copalis, 12.1 miles south of, 40 feet west of Walker cabin (which is east of hunting tripod on beach), south side of poor road, near fence; iron post stamped "12 Wa"-----	11. 887
Copalis, 13.2 miles south of, 1 mile south of Walker cabin, just inside of drift line; spike in base of fence post with white flag, painted and scribed "U.S.B.M. 9"-----	9. 50
Damon Point, memorial to Capt. Gray; copper nail in root of lone spruce tree, painted and scribed "U.S. 13 B.M."-----	9. 50
Damon Point, in northern end of sand spit, about 450 meters (1,500 feet) from the gage (magnetic bearing N. 66° 45' W.) of water tank on jetty dock, corresponding to 20.43 feet on the fixed tide staff; copper bolt set in concrete pier (C. & G. S. b. m. and triangulation station "North Jetty")-----	11. 830

APPENDIX A.

ELEVATIONS ADJUSTED BY THE COAST AND GEODETIC SURVEY FROM PRECISE LEVELING.

Cedar Lake, Ellensburg, Mount Stuart, Pasco, Prosser, Seattle, Snoqualmie,
Tacoma, Wallula, Yakima, and Zillah quadrangles.

BENTON, KING, KITTITAS, WALLA WALLA, AND YAKIMA COUNTIES.

The following descriptions and elevations are taken from reports and manuscript of the Coast and Geodetic Survey and are published by permission of the superintendent of that bureau. The bench marks were established by the Coast and Geodetic Survey and by the United States Geological Survey from precise leveling and were included in the 1912 adjustment by the Coast and Geodetic Survey. The elevations are likely to be changed but little by any future adjustment.

SEATTLE QUADRANGLE.

[Latitude 47° 30'–47° 45'; longitude 122° 15'–122° 30'.]

From Seattle along highways and Northern Pacific Ry. to Black River.

	Feet.
Seattle, 1,368 meters south of Madison Street, 0.2 meter from edge of sill on Post Street, on northern end of doorsill on west side of Rainier Grand Building on Post Street; square cut (Tidal 4 equals City, C. & G. S.)	19. 862
Seattle, on rear of the old Seattle Athletic Club building, now the Seneca Hotel, on Post Street, 2,402 meters north of Seneca Street, 0.681 meter above lower edge of window sill; top surface of an iron hinge (C. & G. S. "Tidal 5")	21. 536
Seattle, at intersection of First Avenue, James Street and Yesler Way, in Pioneer Park, 5,350 meters from east fence of park, 5,430 meters from west fence, 4,070 meters south of totem pole; square hole in top of granite post marked "U. S. □ B. M." (C. & G. S. "G")	25. 111
Seattle, corner of James Street and First Avenue, at entrance of Puget Sound National Bank, 0.20 meter from edge of step and 0.30 meter from granite base supporting the column at side of doorway, the face of which is inscribed "City Datum"; square outlined in granite step (C. & G. S. "City 1")	24. 836
Seattle, on foundation for chimney of Rainier Heat, Light & Power Co.'s generating plant, 76 meters southeast of Hill's gas works and 5 meters from siding of Columbia & Puget Sound R. R., on west side of foundation; cross cut in upper surface of top stone, 0.03 meter from west edge of stone (C. & G. S. "City 2")	10. 945

Feet.

South Seattle, 23 meters west of intersection of Charlestown Street and Eighth Avenue South and about 11 meters north of C. M. Felt's fence; tack in root of maple tree (C. & G. S. "City 3")-----	10. 299
Argo, 0.9 kilometer south of, 65 meters south of south cattle guard for first railroad crossing south of Argo, 11.55 meters from east right of way fence, 3.055 meters from center of nearest Columbia & Puget Sound rail, 1.53 meters from center of nearest Northern Pacific Ry. rail; shallow circular depression in center of cylindrical concrete post set flush with surface of gravel between tracks and marked "N P" on top (C. & G. S. "N P")-----	20. 164
Black River, 4 kilometers north of, near old spur known as Van Asselts, 14 meters south of crossing for logging teams, 1.52 meters from center of nearest Northern Pacific Ry. rail, 1.66 meters from nearest Columbia & Puget Sound rail; shallow circular depression in center of cylindrical concrete post set flush with surface of gravel between the tracks and marked "N P" on top (C. & G. S. "N P")-----	21. 404

TACOMA QUADRANGLE.

[Latitude 47°-47° 30'; longitude 122°-122° 30'.]

From Black River along Northern Pacific Ry. to Covington.

Black River, opposite Northern Pacific Ry. station, 11.55 meters east of nearest Columbia & Puget Sound rail, 1.925 meters west of right of way fence; square hole in top of granite post, marked "U. S. □ B. M." (C. & G. S. "H")-----	20. 545
Black River, 0.25 kilometer south of, on sandstone abutment for approach to Northern Pacific Ry. bridge over Black River, on north end of bridge, on west side of track, 1.34 meters from nearest rail, in concrete abutment, 0.42 meter from south edge and 0.190 meter from west edge; copper bolt (C. & G. S. "I") marked "U. S. □ B. M."-----	34. 209
Kent, in Ed. Brothel's yard on Railroad Avenue, 0.2 meter from west fence and 0.2 meter from south fence; bottom of square hole in top of granite post, marked "U. S. □ B. M." (C. & G. S. "J")-----	40. 354
Kent, at southwest corner of Gowe Street and First or Front Street (as commonly known in town), 2.8 meters south of edge of Gowe Street pavement and 3.8 meters from corner of store building. 0.26 meter above ground, in head of northeast corner bolt holding cap of water hydrant; cut cross (C. & G. S. "K")-----	42. 414
Kent, 2 kilometers south of, 0.8 kilometer north of Thomas at north end of Northern Pacific Ry. bridge over White River, west of track, in upper surface of northwest corner of concrete abutment, 0.1 meter from each edge and 2.22 meters from nearest rail; copper bolt (C. & G. S. "L") marked "U. S. □ B. M."-----	52. 838
Auburn, 73 meters north of small Northern Pacific Ry. station, in Mr. Gilmore's yard, about 20 meters northeast of his house, 2 meters west of fence inclosing his yard, 14.35 meters from nearest rail; bottom of square hole in top of granite post, marked "U. S. □ B. M." (C. & G. S. "M")-----	74. 193
Auburn, in front of R. C. Kinleyside's hardware and furniture store, in cement sidewalk, 2.74 meters from its outer edge and 0.16 meter from building; brass plate (C. & G. S. "N")-----	83. 737

Feet.

Auburn, 0.75 kilometer east of, in top of concrete abutment for approach of Northern Pacific Ry. bridge over White River, 0.365 meter from east edge, 0.18 meter from south edge of abutment and 1.465 meters from nearest rail; bottom of hole 32 millimeters square cut in stone, lettered "U. S. $\square$ B. M." (C. & G. S. "O")	99.468
Covington, 0.9 kilometer west of station, in west abutment of concrete approach to Northern Pacific Ry. bridge 2 over Jenkins Creek, 6 rails west of nearest switch stand, 0.3 meter from east and 0.2 meter from south edge of abutment, 1.5 meters south of nearest rail of track; brass plate (C. & G. S. "P")	330.764
Covington, 36 meters west of station of Northern Pacific Ry., 9 meters south of main-line track, 10 meters south of milepost 224, about in line of telegraph poles and in Northern Pacific right of way; bottom of square hole in top of granite post, marked "U. S. $\square$ B. M." (C. & G. S. "Q")	346.315

CEDAR LAKE QUADRANGLE.

[Latitude 47°-47° 30'; longitude 121° 30'-122°.]

From Ravensdale along Northern Pacific Ry. to Hot Springs.

Ravensdale, 1.9 kilometers west of, on Northern Pacific Ry. concrete arch culvert 1 A, 3 meters north of track, in upper surface at north-east corner, 0.35 meter from east and 0.1 meter from north edge of culvert; copper bolt (C. & G. S. "R")	576.602
Ravensdale, 60 meters west of station, 20 meters south of main track, 0.6 meter east of railway section house; bottom of square hole in top of granite post, marked "U. S. $\square$ B. M." (C. & G. S. "S")	618.611
Ravensdale, 1.7 kilometers east of, on Northern Pacific Ry. concrete arch culvert 1 L over Beaver Creek, 4.3 meters south of railway track, in upper surface of culvert, 0.157 meter from east and 0.15 meter from south edge; copper bolt marked " $\frac{U/S}{B/M}$ " (C. & G. S. "T")	651.160
Ravensdale, 3.2 kilometers east of, on concrete arch culvert near mile pole 215, 2.5 meters north of Northern Pacific Ry. track, in upper surface of culvert, 0.15 meter from west and 0.15 meter from north edge; copper bolt marked " $\frac{U/S}{B/M}$ " (C. & G. S. "U")	705.372
Kanaskat and Palmer Junction, between, about 50 meters east of mile pole 211, in top of concrete abutment for approach at west end of Northern Pacific Ry. bridge over Green River, the tenth crossing over that stream, 0.17 meter from east and 0.11 meter from south edge, 1.5 meters south of nearest rail; copper bolt marked " $\frac{U/S}{B/M}$ " (C. & G. S. "V")	847.944
Palmer Junction, 90 meters west of station, 2 meters south of line of telegraph poles, 9.19 meters south of nearest rail on Tacoma branch of Northern Pacific Ry.; bottom of square hole in top of granite post, marked "U. S. $\square$ B. M." (C. & G. S. "W")	858.230
Palmer Junction, 4 kilometers east of, 6 meters east of tunnel 8, 3 meters north of bridge 211 over Green River, in natural rock; copper bolt (C. & G. S. "X")	932.268

Feet.

Eagle Gorge, 0.8 kilometer west of, on south end of east concrete abutment of bridge 209 over Green River, in top of abutment, 0.15 meter from its west edge, 1.55 meters from rail; copper bolt marked " $\frac{U.S.}{B.M.}$ " (C. & G. S. "Y")-----	1, 080. 224
Canton, 60 meters east of station, in section-house yard, 12.2 meters south of section house, 9.7 meters north of nearest main track rail; bottom of square hole in top of granite post, marked "U. S. $\square$ B. M."-----	1, 204. 604
Hot Springs, in lawn of Kloeber Hotel, 10 meters east of walk leading to station, 3 meters south of south porch of hotel; bottom of square hole in top of granite post, marked "U. S. $\square$ B. M." (C. & G. S. "A ₁ ")-----	1, 518. 291
Hot Springs, 1.85 kilometers east of, in top of retaining wall for east concrete abutment of bridge 201, 0.3 meter from east and 1.65 meters from north edge, 1.3 meters north of rail; red metal disk C. & G. S. "B ₁ ")-----	1, 573. 474

SNOQUALMIE QUADRANGLE.

[Latitude 47°-47° 30'; longitude 121°-121° 30'.]

From Lester along Northern Pacific Ry. to Nelson.

Weston, 1.5 kilometers east of, in vertical face of side rock cut, 16 meters west of mile pole 183, 2.45 meters north of nearest rail, 0.7 meter above level of top of rail; red metal disk (C. & G. S. "C ₁ ")-----	1, 974. 747
Borup, 2.2 kilometers west of, on right of way, 31 meters east of west end of third rock cut east of mile pole 182, 1.95 meters south of nearest rail; copper bolt marked "B. M." set vertically in natural rock (C. & G. S. "D ₁ ")-----	2, 155. 448
Stampede, 370 meters east of, at south side of west entrance to Stampede tunnel, in vertical surface of rock, 3 meters south of nearest rail, 1 meter above level of rails at that point; red metal disk (C. & G. S. "E ₁ ")-----	2, 810. 270
Stampede, 1.7 kilometers east of, on north side of track in Stampede tunnel, near halfway point and at head of grade in tunnel, in vertical brick wall forming west side of manhole, 2.15 meters north of nearest rail, 1.55 meters above floor, 0.45 meter north of side of tunnel; red metal disk (C. & G. S. "F ₁ ")-----	2, 849. 489
Easton, 4.5 kilometers west of, at south end of west concrete abutment of bridge 161 over Cabin Creek, 195 meters east of mile pole 168 Pascal, 0.35 meter from east and 0.18 meter from south edge, 1.67 meters south of nearest rail; copper bolt in upper surface marked "B. M." (C. & G. S. "G ₁ ")-----	2, 238. 850
Easton, in front and 5.5 meters south of A. O. Johnson's house, 2.35 meters east of Johnson Bros.' store 2.2 meters north of fence inclosing yard; bottom of square hole in top of stone post marked "U. S. $\square$ B. M." (C. & G. S. "H ₁ ")-----	2, 166. 784
Easton, in northeast corner of yard surrounding A. J. Adams's residence, 14 meters north of house, 0.74 meter from north fence, 0.62 meter west of east fence inclosing yard, 100 meters south of main track; red metal cap on iron post (C. & G. S. "I ₁ ")-----	2, 169. 130
Nelson, 1.8 kilometers west of, on west concrete abutment of bridge 151, in top surface, 0.35 meter from west edge and 0.18 meter from south edge of abutment, 1.67 meters south of nearest rail; copper bolt marked "U. S. $\square$ B. M." (C. & G. S. "J ₁ ")-----	2, 074. 176

MOUNT STUART QUADRANGLE.

[Latitude 47°-47° 30'; longitude 120° 30'-121°.]

From Clealum along Northern Pacific Ry. to Ellensburg.

Feet.

* Clealum, at corner of Pennsylvania Avenue and Railroad Street, 3.17 meters east of southeast corner of D. B. Burcham's building, 17.8 meters northwest of band stand; cross cut in head of southeast bolt holding cap of fire hydrant (C. & G. S. "K ₁ ")-----	1, 910. 554
Clealum, at corner of Pennsylvania Avenue and First Street, in stone wall of Mr. Heckman's store, facing Pennsylvania Avenue, 0.24 meter from northwest corner of building, 0.37 meter north of south edge of stone, 1.2 meters above sidewalk; red metal disk (C. & G. S. "L ₂ ")-----	1, 913. 993
Clealum, in northeast corner of Mrs. E. F. Shipman's yard, 2 meters northeast of northeast corner of house, 1.65 meters west of east fence, 2 meters south of north fence; red metal cap on iron pipe (C. & G. S. "M ₁ ")-----	1, 909. 579
Bristol, 4.4 kilometers east of, 155 meters east of mile pole 141, in upper surface of rock projecting from side of rock cut, 2.41 meters north of nearest rail; copper bolt marked "U. S. B. M." (C. & G. S. "N ₁ ")-----	1, 751. 460
Thorp, 5.5 kilometers west of, 45 meters east of mile pole 138, on culvert over irrigation ditch, 1.5 meters west of east edge, 0.2 meter north of south edge of abutment, 1.5 meters south of nearest rail; copper bolt marked "U. S. B. M." (C. & G. S. "O ₁ ")-----	1, 711. 715
Thorp, in southwest corner of A. J. Schele's yard, 0.65 meter east of west fence, 0.65 meter north of south fence, 12.67 meters southwest of southwest corner of house; red metal cap on iron pipe (C. & G. S. "P ₁ ")-----	1, 633. 497

ELLENSBURG QUADRANGLE.

[Latitude 46° 30'-47°; longitude 120° 30'-121°.]

From Ellensburg along Northern Pacific Ry. to Thrall and from Wenas to North Yakima.

Ellensburg, in stone foundation of Northern Pacific roundhouse, on west side of building, 8 meters south of northwest door; bottom of square hole, lettered "U. S. B. M." (C. & G. S. "Q ₁ ")-----	1, 516. 116
Ellensburg, in north stone front of Washington State Bank, 1.25 meters above sidewalk; red metal disk (C. & G. S. "R ₁ ")-----	1, 536. 841
Ellensburg, in yard surrounding residence of Ernest Maddux, 1.33 meters from east fence, 1.15 meters north of south fence; red metal cap on iron pipe (C. & G. S. "S ₁ ")-----	1, 514. 974
Thrall, opposite mile pole 122, 20 meters south of nearest rail, 10 meters north of wagon road; red metal cap on iron pipe (C. & G. S. "T ₁ ")-----	1, 428. 324
Wenas, 75 meters west of station, opposite mile pole 94, 10 meters north of nearest rail; red metal cap on iron pipe (C. & G. S. "Y ₁ ")-----	1, 097. 734
North Yakima, in east Northern Pacific Ry. park, 6.1 meters east of west fence inclosing the park; red metal disk on top of iron pipe (C. & G. S. "Z ₁ ")-----	1, 065. 198
North Yakima, in vertical face of stone wall at northeast corner of Sloan's drug store, 0.32 meter east of door, 0.33 meter from edge of wall, 1.2 meters above sidewalk; red metal disk (C. & G. S. "A ₂ ")-----	1, 067. 730

	Feet.
North Yakima, on east side of First National Bank building, in upper surface of stone doorsill of stairway entrance, 0.18 meter from outer edge of doorsill; copper bolt lettered "U. S. B. M." (C. & G. S. "B ₂ ")-----	1, 062. 701
North Yakima, in surface of cement walk leading from residence of Mrs. Moore, 222 North Second Street, to sidewalk, 2.7 meters west of sidewalk, 0.61 meter south of north edge of cement walk; red metal disk (C. & G. S. "C ₂ ")-----	1, 068. 761

YAKIMA QUADRANGLE.

[Latitude 46° 30'–47°; longitude 120°–120° 30'.]

From Umtanum along Northern Pacific Ry. to Selah.

Umtanum, 0.9 kilometer east of, on east concrete abutment of bridge over Umtanum Creek, in upper surface, 0.25 meter north of south edge, 0.25 meter from west edge of abutment, 1.55 meters south of nearest rail; copper bolt lettered "U. S. B. M." (C. & G. S. "U ₁ ")-----	1, 337. 652
Canyon, at siding, in top of granite foundation of water tank, at northeast corner; bottom of rectangular hole, letters "U. S. B. M." cut near bench mark (C. & G. S. "V ₁ ")-----	1, 296. 438
Roza, in southwest corner of section-house yard, 1 meter north of fence, 1.55 meters east of first telegraph pole east of station; red metal cap on iron pipe (C. & G. S. "W ₁ ")-----	1, 245. 276
Selah, 0.8 kilometer east of, in upper surface of center pier of masonry for Northern Pacific Ry. bridge over Yakima River, 2 meters below level of rail and 1 meter outside line of north rail; red metal disk (C. & G. S. "X ₁ ")-----	1, 138. 942

Near Yakima.

Yakima, 1.5 miles east of, on east concrete abutment of Northern Pacific Ry. bridge over Atanum Creek, 0.25 meter east of west edge, 0.3 meter north of south end of abutment, 1.3 meters south of nearest rail; bottom of square hole, lettered "U. S. □ B. M." disk (C. & G. S. "D ₂ ")-----	952. 577
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ZILLAH QUADRANGLE.

[Latitude 46°–46° 30'; longitude 120°–120° 30'.]

From Wapato along Northern Pacific Ry. to Mabton.

Wapato, in Alexander E. McCredy's yard, 9.05 meters west of the house, 8.6 meters south of front fence, 19 meters east of store; red metal cap on iron pipe (C. & G. S. "E ₂ ")-----	853. 840
Wapato, 4.5 kilometers east of, in upper surface of south end of east concrete abutment of Northern Pacific bridge 77 over an irrigation ditch, 0.2 meter from west and south edges of abutment, 1.5 meters south of nearest rail; red metal disk (C. G. S. "F ₂ ")-----	812. 777
Toppenish, 21.07 meters west of northwest corner of section house, 1 meter inside of fence inclosing yard, 11.34 meters south of nearest rail of main track; red metal cap on iron post (C. & G. S. "G ₂ ")-----	754. 289

Feet.

Toppenish, in upper surface of concrete foundation supporting pillars of Northern Pacific water tank, under northern one of two western pillars, 0.26 meter north of south edge, 0.25 meter from east edge, 7 meters north of nearest rail of main track; copper bolt lettered "U. S. B. M." (C. & G. S. "H ₁ '")-----	756. 215
Alfalfa, 6.2 meters west of mile pole 66, 1.75 meters east of telegraph pole, in line with telegraph poles, 14.67 meters south of nearest rail of main track; red metal cap on iron pipe (C. & G. S. "I ₁ '")--	714. 657
Satus, 0.9 kilometer east of, 1.78 meters west of second telegraph pole east of mile pole 60, 10.89 meters south of nearest rail and in line with telegraph poles; red metal cap on iron post (C. & G. S. "J ₁ '")--	668. 975
Mabton, 0.5 kilometer east of, 4.35 meters west of nearest (first) telegraph pole east of milepost 52 and in line with telegraph poles, 15.45 meters south of nearest rail of main track; red metal cap on iron pipe (C. & G. S. "K ₁ '")-----	713. 424

PROSSER QUADRANGLE.

[Latitude 46°-46° 30'; longitude 119° 30'-120°.]

From Byron along Northern Pacific Ry. to Kiona.

Byron, 1.3 kilometers east of siding, 2.5 meters west of third telegraph pole west of mile pole 45, in line with telegraph poles, 10 meters south of nearest rail; red metal cap on iron pipe (C. & G. S. "L ₁ '")-----	691. 216
Prosser, in upper surface of concrete foundation supporting pillars of Northern Pacific water tank, at southeast side of southern one of two eastern pillars, 0.45 meter west of edge of foundation, 0.07 meter west of east edge, 7.55 meters south of nearest rail of main track; copper bolt marked "U. S. B. M." (C. & G. S. "M ₁ '")-----	661. 019
Prosser, in vertical surface of east end of south brick wall of Nelson Rich block, on Sixth Street, 1.51 meters above foundation of building, 0.21 meter from either edge of south wall; red metal disk (C. & G. S. "N ₁ '")-----	667. 342
Prosser, in front of show window of Carl A. Jensen block, on Bennett Avenue, in top of concrete coping, 1 meter west of east edge and 2.95 meters east of entrance to drug store in block; red metal disk (C. & G. S. "O ₁ '")-----	661. 653
Prosser, 0.9 kilometer east of, 116 meters east of mile pole 40, opposite third telegraph pole east of mile pole 40, 5.4 meters north of nearest rail; red metal cap on iron pipe (C. & G. S. "P ₁ '")-----	673. 656
Kiona, 2.7 kilometers west of, 0.4 kilometer east of milepost 28, in ledge of natural rock, 3.03 meters south of nearest rail, level with track; copper bolt marked "U. S. B. M." (C. & G. S. "Q ₁ '")-----	487. 151

PASCO QUADRANGLE.

[Latitude 46°-46° 30'; longitude 119°-119° 30'.]

From Kiona along Northern Pacific Ry. to point near Pasco.

Kiona, in southeast corner of railroad park north of track, 7.48 meters north of nearest rail of main track, 13.40 meters north of northeast corner of station, 1.4 meters northwest of corner post of park fence; bottom of square hole in granite post, marked "U. S. □ B. M." (C. & G. S. "R ₁ '")-----	514. 143
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	Feet.
Klona, 1.6 kilometers east of, 1.52 meters east of second telegraph pole west of mile pole 23, 15.5 meters south of track, in line with telegraph poles; iron post (C. & G. S. "S ₂ ")-----	539. 238
Badger, 21 meters north of mile pole 17, 27.8 meters north of nearest rail of main track, near line of Northern Pacific right of way; bottom of square hole in top of granite post, marked "U. S. $\square$ B. M." (C. & G. S. "T ₂ ")-----	676. 666
Relief, near, 3.9 meters east of first telegraph pole west of mile pole 8, 15.50 meters south of track, in line with telegraph poles; bottom of square hole in top of granite post, marked "U. S. $\square$ B. M." (C. & G. S. "U ₂ ")-----	563. 359
Kennewick, near building of Northern Pacific Irrigation Co. on Front Street, 38 meters west of Yakima Street, 0.5 meter from north and west walls of an alcove in northwest corner; red metal cap on iron pipe (C. & G. S. "V ₂ ")-----	367. 745
Kennewick, in yard surrounding residence of L. E. Moore, 5.1 meters southwest of southwest corner of house, 5 meters east of fence inclosing yard in front of house, 70 meters north of main track of Northern Pacific Ry.; bottom of square hole in granite post; marked "U. S. $\square$ B. M." (C. & G. S. "W ₂ ")-----	355. 176
Kennewick, 2 kilometers east of, at west end of bridge over Columbia River, on south side of track, in top of concrete cap for concrete pier, 0.15 meter from east and west edges, 2.2 meters below level of rack; red metal disk (C. & G. S. "X ₂ ")-----	352. 303
Pasco, 2 kilometers west of station, at east end of Northern Pacific Ry. bridge over Columbia River, on south side of track, in top of concrete cap, 0.15 meter from east and west edges and about 2.2 meters below level of track; red metal disk (C. & G. S. "Y ₂ ")-----	352. 059
Pasco, 1 kilometer west of, 83 meters southwest of first switch stand, in line with telegraph poles, 12.2 meters southeast of nearest rail; red metal cap on iron pipe (C. & G. S. "Z ₂ ")-----	376. 794
Pasco, in yard surrounding Hotel Pasco, on Court Street, 0.7 meter west of sidewalk in front of hotel, 10.35 meters east of east side of hotel, 57.50 meters south of main track; bottom of square hole in top of granite post, marked "U. S. $\square$ B. M." (C. & G. S. "A ₂ ")-----	378. 204
Pasco, near, on Northern Pacific Ry. bridge over Snake River, on top of granite retaining wall for west abutment, 0.3 meter west of east edge of granite capstone, 2.3 meters south of nearest rail; red metal disk (C. & G. S. "B ₂ ")-----	357. 499
Pasco, near, on Northern Pacific Ry. bridge over Snake River, at first pier from west end, 1.25 meters south of nearest rail, in surface of girder at east end of truss; intersection of cross lines, lettered "U. S. B. M." (C. & G. S. "C ₂ ")-----	357. 637
Pasco, near, on Northern Pacific Ry. bridge over Snake River, on girder at west end of truss at third pier from west end, 1.25 meters south of nearest rail; intersection of cross lines, lettered "U. S. B. M." (C. & G. S. "D ₂ ")-----	357. 610
Pasco, near, on Northern Pacific Ry. bridge over Snake River, at Fourth pier from west end of bridge, 1.25 meters south of nearest rail, on girder at east end of truss, intersection of cross lines, marked "U. S. B. M." (C. & G. S. "E ₂ ")-----	357. 604

Feet.

Pasco, near, on Northern Pacific Ry. bridge over Snake River, at fifth pier from west end of bridge, 1.25 meters south of nearest rail, on east end of truss; intersection of cross lines, marked "U. S. B. M." (C. & G. S. "F ₁ ")-----	357. 637
Pasco, near, on Northern Pacific Ry. bridge over Snake River, at sixth pier from west end of bridge, 1.25 meters south of nearest rail, on east end of truss; intersection of cross lines, marked "U. S. B. M." (C. & G. S. "G ₁ ")-----	357. 585
Pasco, near, on Northern Pacific Ry. bridge over Snake River, at seventh pier from west end of bridge, 1.25 meters south of nearest rail, on girder at east end of truss; intersection of cross lines, "U. S. B. M." (C. & G. S. "F ₁ ")-----	357. 633
Walla Walla, near Pasco, on Northern Pacific Ry. bridge over Snake River, on top of granite retaining wall for east abutment, 0.3 meter east of west edge of granite capstone, 1.2 meters south of "U. S. B. M." (C. & G. S. "G ₁ ")-----	357. 523

WALLULA QUADRANGLE.

[Latitude 46°-46° 30'; longitude 118° 30'-119°.]

From point near Pasco along Northern Pacific Ry. to point near Hunts Junction.

Hunts Junction, 6.4 kilometers northwest of, opposite and about 25 meters northwest of mile pole 5, 11.2 meters northeast of nearest rail, in line of telegraph poles; red metal cap on iron pipe (C. & G. S. "J ₁ ")-----	327. 597
Hunts Junction, 3.2 kilometers northwest of, 1.6 meters northwest of first telegraph pole southeast of mile pole 3, 11.2 meters northeast of nearest rail, in line with telegraph poles; red metal cap on iron pipe (C. & G. S. "K ₁ ")-----	341. 906
Hunts Junction, in northeast corner of Northern Pacific Ry. section-house yard, 3 meters west of nearest rail on main track, 0.8 meter south of north fence, 0.8 meter west of east fence inclosing yard; bottom of square hole in top of granite post, marked "U. S. $\square$ B. M." (C. & G. S. "L ₁ ")-----	324. 855
Hunts Junction, in southeast corner of yard surrounding residence of storekeeper for Northern Pacific Ry., 18 meters west of nearest rail of main track, 0.7 meter from south and east fences inclosing yard; red metal cap on iron pipe (C. & G. S. "M ₁ ")-----	320. 948
Hunts Junction, near, at west end of Northern Pacific Ry. bridge over Walla Walla River, in top of concrete abutment, 1.4 meters from east and south edges, 1.8 meters south of nearest rail; red metal disk (C. & G. S. "N ₁ ")-----	398. 474
Hunts Junction, near, at east end of Northern Pacific Ry. bridge over Walla Walla River, in top of abutment, 0.8 meter west of east edge, 0.5 meter north of south edge, 1.8 meters south of nearest rail; red metal disk (C. & G. S. "O ₁ ")-----	402. 844
Hunts Junction, 8.4 kilometers southeast of, about 2 meters south of seventh telegraph pole southwest of mile pole 5, 12 meters south of nearest rail; red metal cap on iron pipe (C. & G. S. "P ₁ ")-----	418. 080
Hunts Junction, 6 miles southeast of, at mile pole 6, on right of way, 15 meters west of track; bottom of square hole in top of stone post, marked "U. S. $\square$ B. M." (C. & G. S. "Q ₁ ")-----	473. 151

APPENDIX B.

SECONDARY ELEVATIONS.

Secondary elevations from records and topographic maps of the United States Geological Survey, including vertical-angle bench marks, altitudes of well-known summits, water-surface elevations of prominent lakes, and other useful elevations, are given below. These elevations are approximate only and should not be used for accurate work.

Locality.	Quadrangle.	County.	Elevation.
			<i>Feet.</i>
Alta Lake, water surface.....	Okanogan.....	Okanogan.....	1,175
Alta Mountain.....	Snoqualmie.....	Kittitas.....	6,265
Anvil Rock, Johnnie Peak triangulation station, on rocky ridge overlooking upper part of Cowlitz Glacier and projecting from new fields leading up to Camp Muir; triangulation tablet.	Mount Rainier National Park.	Pierce.....	9,620
Atanum Ridge.....	Ellensburg.....	Yakima.....	3,369
Auburn.....	Tacoma.....	King.....	90
Bald Butte.....	Pullman.....	Whitman.....	3,452
Bald Knob.....	Okanogan.....	Okanogan.....	3,472
Bald Mountain.....	Ellensburg.....	Kittitas.....	5,906
Do.....	Mount Vernon.....	Skagit.....	2,482
Do.....	do.....	Skagit-Snohomish.....	3,045
Do.....	Republic.....	Ferry.....	6,946
Baldy Mountain.....	Chelan.....	Chelan.....	6,432
Bear Creek Mountain.....	Mount Aix.....	Yakima.....	7,335
Bear Gap.....	do.....	Pierce-Yakima.....	5,882
Bear Lake, water surface.....	Skykomish.....	King.....	3,670
Bear Mountain.....	do.....	Snohomish.....	5,482
Bearpaw Butte.....	Snoqualmie.....	King-Kittitas.....	4,835
Beljica, Coast Survey triangulation station west of Mount Wow.	Mount Rainier National Park.	Pierce.....	5,473
Big Four Mountain.....	Stilaguamish.....	Snohomish.....	6,120
Big Lake, water surface.....	Mount Vernon.....	Skagit.....	85
Big Snow Mountain.....	Skykomish.....	King.....	6,670
Black Mountain.....	Glacier Peak.....	Snohomish.....	7,192
Blanca Lake, water surface.....	Skykomish.....	do.....	4,064
Blue Lake, water surface.....	Osoyoos.....	Okanogan.....	1,765
Bonaparte Mountain.....	do.....	do.....	7,280
Boston Peak.....	Glacier Peak.....	Chelan-Skagit.....	8,850
Boundary Post No. 1, on Carbon River.....	Mount Rainier National Park.	Pierce.....	1,716
Boundary Post No. 42, on Muddy Fork of Cowlitz River.	do.....	Lewis.....	2,336
Boundary Post No. 46, at Hot Springs Ranger Station.	do.....	do.....	2,004
Boundary Post No. 56, on divide between Ohanapcosh and White Rivers drainage in what is locally known as Sheepskull Gap. Bench mark is National Park boundary post stamped "5217."	do.....	Pierce.....	5,213
Boundary Post No. 75, West Fork of White River.	do.....	do.....	2,921
Boundary Post No. 84, Carbon River (Carbon River Ranger Station).	do.....	do.....	2,026
Brodie Mountain.....	Republic.....	Ferry.....	5,685
Buck Creek Pass.....	Stebekin.....	Chelan-Snohomish.....	5,796
Buck Mountain.....	Okanogan.....	Okanogan.....	6,170
Bumping Lake, water surface.....	Mount Aix.....	Yakima.....	3,395
Carbon Glacier, lower end.....	Mount Rainier National Park.	Pierce.....	3,355
Cascade Pass.....	Glacier Peak.....	Chelan-Skagit.....	5,392

Locality.	Quadrangle.	County.	Elevation.
Castle Rock.....	Mount Rainier National Park.	Pierce.....	<i>Feet.</i> 6,116
Cathedral Rock, triangulation station, on west side of Ohanapeosh Glacier.	do.....	do.....	8,262
Cavanaugh Lake, water surface.....	Mount Vernon.....	Skagit.....	1,016
Chelan Butte.....	Chelan.....	Chelan.....	3,892
Chenais Mountain, on sharp rocky summit about 1 mile west of Windy Gap. Trail from Carbon River to West Fork of White River is about 1.8 miles north of point. Trail crosses first ridge after leaving Carbon River about $\frac{1}{2}$ mile northwest of point; bronze tablet stamped "6040."	Mount Rainier National Park.	Pierce.....	6,030
Chimney Rock.....	Skykomish.....	King-Kittitas.....	7,727
Chopaka Mountain.....	Chopaka.....	Okanogan.....	7,870
Chopaka triangulation station.....	do.....	do.....	7,390
Cispus Pass.....	Mount Adams.....	Lewis-Yakima.....	6,473
Clark Peak.....	Chopaka.....	Okanogan.....	7,900
Clealum Lake, water surface.....	Snoqualmie.....	Kittitas.....	2,128
Cleman Mountain.....	Ellensburg.....	Yakima.....	5,000
Cleveland Mountain.....	Skykomish.....	King.....	5,301
Coal Mountain.....	Stillaguamish.....	Skagit.....	4,317
Columbia Peak.....	Skykomish.....	Snohomish.....	7,134
Conconully Lake, water surface.....	Chopaka.....	Okanogan.....	2,287
Cooke Mountain.....	Republic.....	Ferry.....	5,097
Copper Mountain.....	do.....	do.....	4,446
Cowichee Mountain.....	Ellensburg.....	Yakima.....	4,300
Cowlitz Chimney triangulation station, on highest peak of Cowlitz Chimneys.	Mount Rainier National Park.	Pierce.....	7,607
Coyote Rocks.....	Mount Adams.....	Yakima.....	6,130
Crater Lake.....	Mount Rainier National Park.	Pierce.....	4,929
Crater Lake, water surface.....	Glacier Peak.....	Skagit.....	4,960
Crosby Mountain.....	Skykomish.....	King.....	5,533
Crown Point.....	Mount Aix.....	Pierce-Yakima.....	6,470
Cumberland Mountain.....	Republic.....	Okanogan.....	3,546
Curlew Lake, water surface.....	do.....	Ferry.....	2,347
Day Lake, water surface.....	Stillaguamish.....	Skagit.....	1,825
Deer Lake, water surface.....	Skykomish.....	King.....	3,620
Diamond Butte.....	Mount Adams.....	Yakima.....	5,796
Dickerman Mountain.....	Glacier Peak.....	Snohomish.....	5,766
Dome Peak.....	do.....	Chelan-Skagit.....	8,800
Do.....	Mount Aix.....	Yakima.....	6,586
Double Peak triangulation station known as Double on southeast extremity of ridge known as Cowlitz Chimneys, on south or highest peak; bronze tablet stamped "6204."	Mount Rainier National Park.	Pierce.....	6,200
Douglas Mountain.....	Chopaka.....	Okanogan.....	5,420
Dumpty Lake, water surface.....	Stehakin.....	Chelan.....	2,213
Eagle Peak triangulation station, on west end of Tatoosh Range.	Mount Rainier National Park.	Lewis.....	5,955
Ellemeham Mountain.....	Chopaka.....	Okanogan.....	4,770
Emmons Glacier, lower end.....	Mount Rainier National Park.	Pierce.....	4,719
Fairfield.....	Oakesdale.....	Spokane.....	2,559
Fay Peak.....	Mount Rainier National Park.	Pierce.....	6,500
Fir Mountain.....	Republic.....	Okanogan.....	5,666
Fish Lake, water surface.....	Chopaka.....	do.....	1,799
Do.....	Mount Adams.....	Yakima.....	4,042
Found Lake, water surface.....	Glacier Peak.....	Skagit.....	4,150
Fralley Mountain.....	Stillaguamish.....	do.....	2,795
Frenchman Hills.....	Red Rock.....	Grant.....	1,767
Frost Mountain.....	Mount Stuart.....	Kittitas.....	5,750
Garland Peak.....	Stehakin.....	Chelan.....	7,545
Gibraltar, highest point at upper end of Cowlitz Cleaver.	Mount Rainier National Park.	Pierce.....	12,679
Gibraltar Mountain.....	Republic.....	Ferry.....	3,783
Glacier Basin, Starbo Camp.....	Mount Rainier National Park.	Pierce.....	5,935
Glacier Peak.....	Glacier Peak.....	Snohomish.....	10,436
Goat Butte.....	Mount Adams.....	Yakima.....	7,487
Goat Mountain.....	Okanogan.....	Okanogan.....	5,290
Goat Peak.....	Mount Aix.....	Yakima.....	6,494
Goat Rocks.....	Mount Adams.....	do.....	8,201
Goat triangulation station, on highest point of Mount Wow.	Mount Rainier National Park.	Pierce.....	6,030
Gold City, junction of trails.....	do.....	do.....	2,752
Gold Hill.....	Chopaka.....	Okanogan.....	4,620
Gold Mountain.....	Stillaguamish.....	Snohomish.....	3,493
Grand Park, south end.....	Mount Rainier National Park.	Pierce.....	5,736
Granite Butte.....	Oakesdale.....	Whitman.....	2,930
Granite Mountain.....	Republic.....	Ferry (west side).....	5,326
Do.....	do.....	Ferry (center).....	5,912
Do.....	Snoqualmie.....	King.....	5,820

Locality.	Quadrangle.	County.	Elevation. Feet.
Green Mountain	Glacier Peak	Snohomish.	5,957
Green Pass	Snoqualmie	King-Kittitas	4,894
Gunn Peak	Skykomish	Snohomish.	6,245
Hart Lake, water surface.	Stehakin	Chelan.	3,890
Haystack Mountain	Mount Vernon	Skagit.	4,126
Helena Peak	Stilaguamish	Snohomish.	5,392
Higgins Mountain	do	Skagit.	5,202
Horse Heaven Hills	Zillah	Klickitat-Yakima.	4,035
Horseshoe Mountain	Chopaka	Okanogan	7,930
Howard Lake, water surface	Mount Adams	Yakima	4,887
Hubbard Peak	Skykomish	Snohomish.	5,925
Huckleberry Mountain	Glacier Peak	Skagit-Snohomish	5,355
Hull Mountain	Osoyoos	Okanogan	5,110
Index Mountain	Skykomish	Snohomish.	6,125
Irene Mountain	Republic	Okanogan	4,712
Iron Mountain	do	Ferry	4,807
Do	Stilaguamish	Skagit.	4,886
Issaquah	Seattle	King.	96
Johns Butte	Mount Adams	Yakima	5,918
Jumbo Mountain	Stilaguamish	Snohomish.	5,806
Kachess Lake, water surface	Snoqualmie	Kittitas	2,226
Kamiak Mountain	Pullman	Whitman	3,650
Keechelus Lake, water surface	Snoqualmie	Kittitas	2,458
Kent	Tacoma	King.	50
Kickerville	Blaine	Whatcom.	213
King Mountain	Sumas	do	521
Kruger Mountain	Osoyoos	Okanogan	2,890
Ladow Butte	Pullman	Whitman	3,302
Lake Chelan, water surface	Chelan-Methow	Chelan.	1,079
Lake Goodwin, water surface	Mount Vernon	Snohomish.	329
Lake Stevens, water surface	do	do	212
Lake Tapps, water surface	Tacoma	Pierce.	516
Lake Terrell, water surface	Blaine	Whatcom.	208
Lake Union, water surface	Seattle	King.	12
Lake Washington, water surface	do	do	22
Lakeview Mountain	Mount Adams	Lewis-Yakima.	6,661
Lemanasky Mountain	Chopaka	Okanogan	5,206
Liberty Cap	Mount Rainier National Park.	Pierce	14,112
Liberty Lake, water surface	Spokane	Spokane.	2,052
Lichtenberg Mountain	Skykomish	Chelan.	5,920
Little Mount Adams	Mount Adams	Yakima	6,815
Little Tahoma, high rock point 2.5 miles east of summit of Mount Rainier.	Mount Rainier National Park.	Pierce	11,117
Long Mountain	Stilaguamish	Snohomish.	5,109
Lookout Mountain	Methow	Okanogan	5,692
Do	Mount Stuart	Kittitas.	3,440
McNeill Peak	Mount Aix	Yakima	6,788
Marble Peak	Stilaguamish	Snohomish.	5,156
Maverick Peak	Chiwaukum	Chelan.	5,308
Merchant Peak	Skykomish	Snohomish.	5,466
Miller Peak	Mount Stuart	Chelan-Kittitas	6,460
Mineral Hill	Chopaka	Okanogan	5,500
Montborne	Mount Vernon	Skagit.	116
Mount Adams	Mount Adams	Yakima	12,307
Mount Aix	Mount Aix	do	7,805
Mount Annie	Osoyoos	Okanogan	6,056
Mount Carlton	Spokane	Spokane.	5,808
Mount McCay	Chopaka	Okanogan	7,628
Mount Rainier, highest snow summit (highest point in State yet determined).	Mount Rainier National Park.	Pierce	14,408
Mount Rainier National Park, on high lone rock on divide between South Fork of Mowich River and North Fork of Puyallup River, 3 miles from west boundary of park, marked by cairn of rocks 4 feet high; aluminum tablet stamped "6977 V. A."	do	do	6,965
Mount Stuart	Mount Stuart	Chelan.	9,470
Naches Pass	Snoqualmie	King-Pierce, Kittitas-Yakima.	4,988
Naff Ridge	Oakesdale	Whitman	3,033
Newman Lake, water surface	Spokane	Spokane.	2,130
Oak Hill	Mount Adams	Yakima	2,830
Observation Rock triangulation station, on high sharp rock on divide between Carbon and Mowich River glaciers, and 2 miles southeast of Spray Park triangulation station, rock cairn 6 feet high; tablet stamped "8376 V. A."	Mount Rainier National Park.	Pierce	8,364
Old Baldy	Chopaka	Okanogan	7,870
Do	do	do	5,230
Old Scab Mountain	Mount Aix	Yakima	6,642
Osoyoos Lake, water surface	Osoyoos	Okanogan	913
Oval Peak	Methow	do	8,800
Palmer Lake, water surface	Chopaka	do	1,150
Palmer Mountain	do	do	4,370

Locality.	Quadrangle.	County.	Elevation.
			<i>Feet.</i>
Park, on bald hill on divide between Muddy Fork and Ohanapeosh River, in south edge of Cowlitz Park, about 1.5 miles north of trail crossing. Bronze tablet stamped "5580."	Mount Rainier National Park.	Pierce.....	5,572
Parrygin Lake, water surface.....	Methow.....	do.....	2,020
Patterson Lake, water surface.....	do.....	do.....	2,380
Peacock Mountain.....	Chopaka.....	do.....	4,520
Peak Success.....	Mount Rainier National Park.	Pierce.....	14,150
Pilechuck.....	Mount Vernon.....	Snohomish.....	139
Pilechuck Mountain.....	Stillaguamish.....	do.....	5,334
Pinnacle Peak triangulation station on Tatoosh Range directly south of Reflection Lake. V. A. B. M. is bronze tablet set in rock 8 feet north of monument marking triangulation station, stamped "6566."	Mount Rainier National Park.	Lewis.....	6,562
Poland Butte.....	Mount Adams.....	Yakima.....	2,143
Prairie Mountain.....	Glacier Peak.....	Snohomish.....	5,670
Pugh Mountain.....	do.....	do.....	7,150
Do.....	do.....	do.....	7,150
Pyramid Mountain.....	Stehekin.....	Chelan.....	8,240
Pyramid Peak.....	Snoqualmie.....	King-Kittitas.....	5,723
Rainier Fork, peak north of divide at head of Rainier Fork of American River.	Mount Rainier National Park.	Pierce.....	6,231
Rattlesnake Ridge.....	Zillah.....	Yakima.....	3,007
Red Butte.....	Mount Adams.....	do.....	7,203
Red Mountain.....	Glacier Peak.....	Snohomish.....	6,930
Do.....	Snoqualmie.....	Kittitas.....	5,707
Riley Lake, water surface.....	Stillaguamish.....	Snohomish.....	525
Ruby Hill.....	Okanogan.....	Okanogan.....	4,950
Saddle Mountain.....	Red Rock.....	Grant.....	2,696
St. Elmo Pass.....	Okanogan.....	Okanogan.....	7,415
Salt Lake Hill.....	do.....	do.....	2,960
Sammamish Lake, water surface.....	Seattle.....	King.....	35
Saxton Rock.....	Mount Adams.....	Yakima.....	4,413
Sheep Mountain.....	Glacier Peak.....	Snohomish.....	6,120
Shaw Mountain.....	Mount Adams.....	Klickitat.....	3,620
Signal Peak.....	do.....	Yakima.....	5,111
Sloan Peak.....	Glacier Peak.....	Snohomish.....	7,790
Suski Mountain.....	Mount Rainier National Park.	Pierce.....	7,015
Snipes Mountain.....	Zillah.....	Yakima.....	1,290
Snoqualmie Lake, water surface.....	Skykomish.....	King.....	3,225
Snoqualmie Mountain.....	Snoqualmie.....	do.....	6,270
Snowshoe Butte.....	do.....	King-Kittitas.....	5,139
Sourdough Mountain, on rocky summit at extreme southeast end of Sourdough Mountains, about 0.5 mile north of trail between Huckleberry Parks; bronze tablet stamped "7016."	Mount Rainier National Park.	Pierce.....	7,006
Spanaway Lake.....	Tacoma.....	Pierce.....	329
Spangle.....	Oakesdale.....	Spokane.....	2,431
Spectacle Lake, water surface.....	Chopaka.....	Okanogan.....	1,351
Spire Mountain.....	Skykomish.....	Snohomish.....	6,065
Spire Point.....	Glacier Peak.....	Chelan-Skagit.....	8,220
Squak Mountain.....	Seattle.....	King.....	1,980
Squalicum Mountain.....	Sumas.....	Whatcom.....	1,525
Steamboat Prow (summit of "The Wedge").....	Mount Rainier National Park.	Pierce.....	9,702
Steptoe Butte.....	Oakesdale.....	Whitman.....	3,613
Stevens Pass.....	Skykomish.....	Chelan-King.....	4,061
Stevens Peak triangulation station, southeast end of Tatoosh Range.	Mount Rainier National Park.	Lewis.....	6,511
Stillaguamish Peak.....	Glacier Peak.....	Snohomish.....	5,683
Stormy Mountain.....	Chelan.....	Chelan.....	7,219
Stratton Butte.....	Oakesdale.....	Whitman.....	3,300
Strawberry Mountain.....	Osoyoos.....	Okanogan.....	4,750
Sugarloaf Peak.....	Chiwaukum.....	Chelan.....	5,840
Sumner.....	Tacoma.....	Pierce.....	74
Swan Lake, water surface.....	do.....	King.....	478
Table Mountain.....	Mount Stuart.....	Kittitas.....	6,243
Tekoa Mountain.....	Oakesdale.....	Spokane-Whitman.....	4,006
Temple Mountain.....	Skykomish.....	King.....	3,570
Thornton.....	Oakesdale.....	Whitman.....	2,297
Three Brothers.....	Mount Stuart.....	Chelan.....	7,370
Three Fingers.....	Stillaguamish.....	Snohomish.....	6,845
Tieton Peak.....	Mount Aix.....	Yakima.....	7,775
Tiffany Mountain.....	Chopaka.....	Okanogan.....	8,275
Timberwolf Mountain.....	Mount Aix.....	Yakima.....	6,435
Tolmie Peak triangulation station, on highest point of Tolmie Peak on divide between Carbon and Mowich rivers, 1.5 miles northwest of Crater Lake, marked by cairn of rocks; aluminum tablet stamped "5951 V. A."	Mount Rainier National Park.	Pierce.....	5,939
Toppenish Ridge.....	Zillah.....	Yakima.....	2,093

Locality.	Quadrangle.	County.	Elevation.
			<i>Feet.</i>
Toroda Mountain.....	Republic.....	Okanogan.....	4,621
Townsend Mountain.....	Skykomish.....	Snohomish.....	5,405
Trapper Lake, water surface.....	Glacier Peak.....	Chelan.....	4,300
Tunk Mountain.....	Osoyoos.....	Okanogan.....	6,065
Twin Lakes, water surface.....	Chiwaukum.....	Chelan.....	2,308
Do.....	Stillaguamish.....	Snohomish.....	690
Twin Peaks.....	Glacier Peak.....	do.....	5,995
Twisp Pass.....	Stehakin.....	Chelan-Okanogan.....	6,066
Two Lakes, water surface.....	Mount Adams.....	Yakima.....	4,259
Tyee Mountain.....	Chelan.....	Chelan.....	4,285
Umptanum Ridge.....	Ellensburg.....	Yakima.....	6,688
Vesper Peak.....	Stillaguamish.....	Snohomish.....	4,217
Wadupt Lake, water surface.....	Mount Adams.....	Lewis.....	6,190
Wannacut Lake, water surface.....	Chopaka.....	Okanogan.....	3,827
Wapitus Lake, water surface.....	Skykomish.....	Kittitas.....	1,847
Wenatchee Lake, water surface.....	Chiwaukum.....	Chelan.....	2,930
Whisky Mountain.....	Osoyoos.....	Okanogan.....	1,870
Whitechuck Mountain.....	Glacier Peak.....	Snohomish.....	2,837
White Horse Mountain.....	Stillaguamish.....	do.....	6,935
Whitestone.....	Osoyoos.....	Okanogan.....	6,820
Windy Pass.....	Stillaguamish.....	Snohomish.....	2,867
Windy Peak.....	Chopaka.....	Okanogan.....	3,705
Winthrop Glacier, lower end.....	Mount Rainier National Park.....	Pierce.....	8,345
			4,872

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